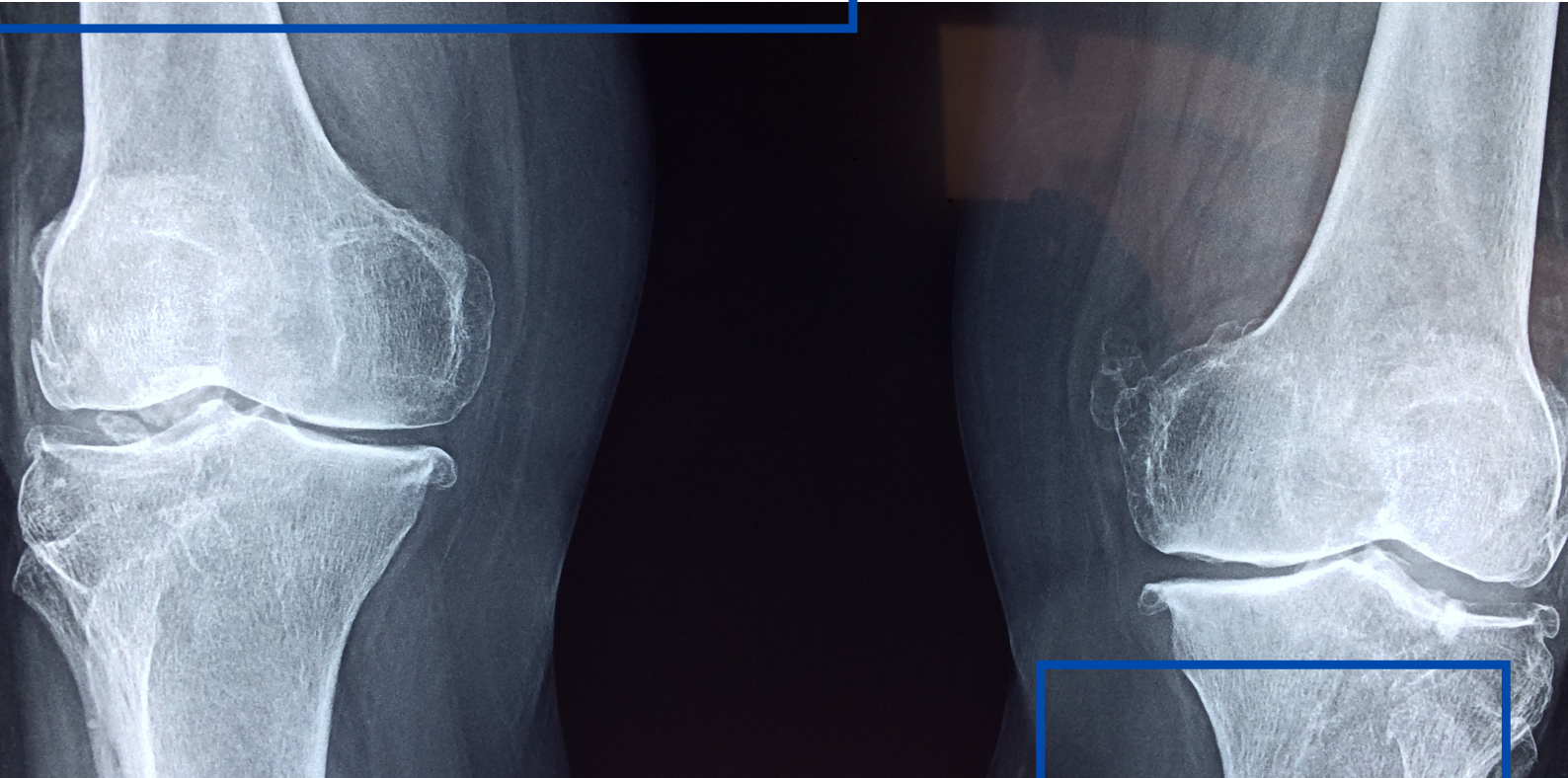


OSTEOPOROSIS AWARENESS WORKBOOK

PDHPE Stage 5 Student Workbook

STUDENT NAME:



INTRODUCTION

WHY OSTEOPOROSIS AWARENESS?

Osteoporosis is a common disease affecting over 1 million Australians. This disease makes bones become brittle leading to a higher risk of breaks than in normal bone. Osteoporosis occurs when bones lose minerals, such as calcium, more quickly than the body can replace them, causing a loss of bone thickness (bone density or mass). Thus, bones become more porous and less dense so that even a minor bump or fall can result in a fracture.

Bones have many critical functions in our body. For children, strong healthy bones assist in reaching their optimum growth level. Bones reach their peak bone mass in your 20s, which is when our bones are at their strongest. For adults, strong healthy bones mean you can maintain your bone density and lead a fit and active life well into old age. Strong bones reduce the risk of fractures in later life. This program hopes to educate our youth to ensure recognition of Osteoporosis occurs at an age where individuals have the capacity to build their peak bone mass!

WITHIN THIS
WORKBOOK:

02 *LESSON ONE*

07 *LESSON TWO*

10 *LESSON THREE*

15 *LESSON FOUR*

**LESSON
ONE**

THE IMPORTANCE OF BONES

ACTIVITY ONE (core)

1(a) Osteoporosis Awareness video

Please watch the Osteoporosis Awareness video - https://youtu.be/pkGX_RJ_sXA
You can also view it in 360 degrees on the Youtube App - <https://youtu.be/TeCXhin4koE>

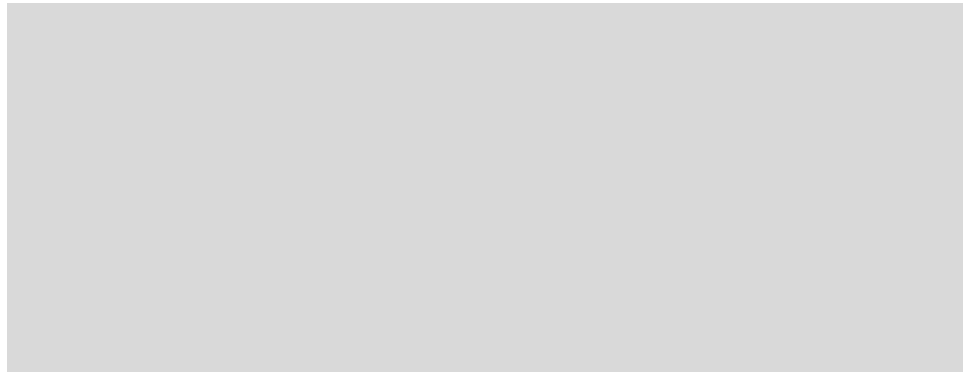
Complete the first two activities online in Lesson one with Mrs Cooper (<https://mskhealthresearch.com/osteoporosis-lesson-1>). Once completed, using these websites to assist you, research, and answer the following questions:

- <https://www.osteoporosis.foundation/health-professionals/about-osteoporosis/bone-biology>
- <https://www.healthline.com/health/bone-health/bone-function>
- <https://sciencing.com/five-main-functions-skeletal-system-5084078.html>



*To thrive in life
you need three
things: a
wishbone, a
backbone and a
funny bone."*

1(b) What are bones??



1(c) Why are bones important to us??

1.
2.
3.
4.
5.
6.



LESSON ONE

ACTIVITY TWO (core)

Using this video (<https://youtu.be/vDjW00S29I0>) as well as the activities 'different Types of Bones and Bone Functions' with Mrs Cooper (<https://mskhealthresearch.com/osteoporosis-lesson-1>), record the main types of bones presented and their function in the table.

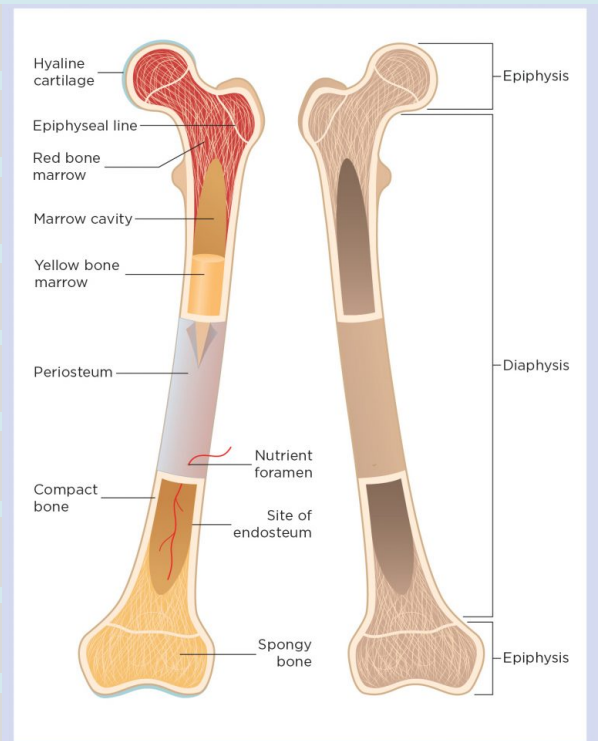
Type of bone:	Function of bone:



ACTIVITY THREE (core)

Complete the next two activities with Mrs Cooper (<https://mskhealthresearch.com/osteoporosis-lesson-1>), watching the 'Parts of a Long Bone' video (<https://youtu.be/6PQ5Rv6ONfY>) as well as the diagram drop box. Using this information, outline the main function of each part of the bone below and complete the diagram with the missing parts:

Part of bone:	Main function of bone:
Diaphysis (The Shaft)	
Epiphysis	
Osteoclasts	
Osteocytes	
Osteoblasts	
Bone Marrow	
Collagen	
Periosteum	



LESSON ONE

ACTIVITY FOUR (core)

Using the Osteoporosis Australia website (<https://healthybonesaustralia.org.au/your-bone-health/about-bones/>), research what actions people can take to maintain and improve bone health. Identify the potential impacts on individual's lifestyles if they experience a decrease in bone health.

Factors that maintain bone health	Impact of factor on bone health if not adequately maintained
eg: Calcium intake	eg: Calcium is required for building and maintaining bone, without it your bones lack strength and structure, reducing your bone density and increasing potential osteoporosis risk



ACTIVITY FIVE (core)

Using this website link (<https://mskhealthresearch.com/evaluating-web-resources>), discuss why the information from Osteoporosis Australia could or could not be a credible source for information. Create your own class checklist for identifying credible sources when conducting research.

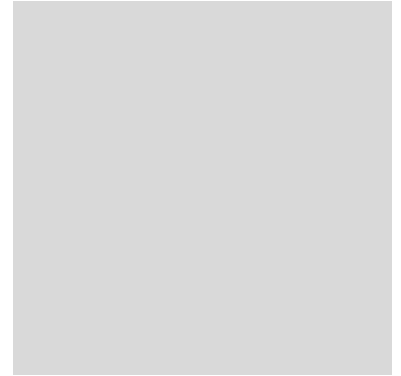
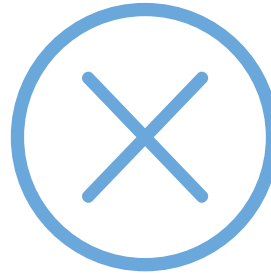
- eg: the author is clearly identified on the website
-
-
-
-
-
-
-



LESSON ONE

ACTIVITY SIX (extension)

6(a) Using the class created 'credible checklist', find three more credible sources of information on Osteoporosis as well as one source of information that doesn't meet the 'credible checklist', and compare the information.



6(b) Is all the information the same? How is it different? Discuss with the class and record important points below.

ACTIVITY SEVEN (extension)

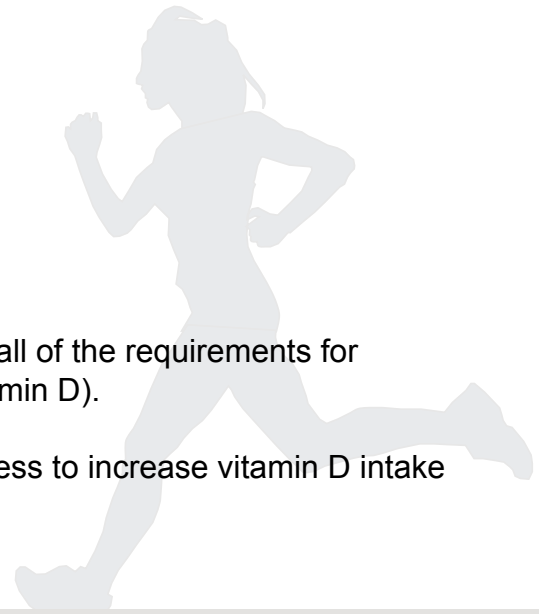
7(a) In groups, using credible sources, research policies for physical activity in Australian schools, transferring them into the table below. Use the example and this website (<https://policies.education.nsw.gov.au/policy-library/policies/sport-and-physical-activity-polic>) as a starting point.

Policy	Policy Component
<i>VIC Government Physical and Sport Education Delivery</i>	<i>100 minutes of PE per week, 100 minutes of sport per week. Meets partial exercise requirements.</i>

7(b) Do the policies above meet the requirements for increasing and maintaining bone health if so, why? If not, why not?



LESSON ONE



ACTIVITY EIGHT (extension)

Create five guidelines for a future school policy if it was to meet all of the requirements for increasing and maintaining bone health (Exercise, Calcium, Vitamin D).

For example: You do not have to wear a hat in winter during recess to increase vitamin D intake

Guideline 1:

Guideline 2:

Guideline 3:

Guideline 4:

Guideline 5:

QUICK QUIZ!

Remember to complete the online quiz with Mrs Cooper at the end of the lesson!
<https://mskhealthresearch.com/osteoporosis-lesson-1>

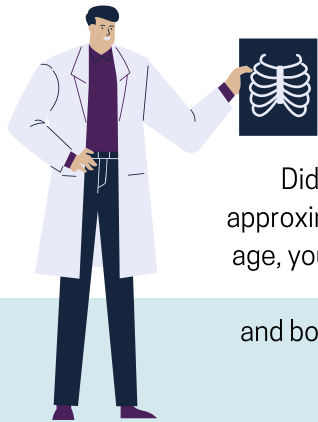
Once you have completed Lesson 1 please complete this short survey
<https://redcap.sydney.edu.au/surveys/?s=47YFAH49EHXPLE3KK>

LESSON TWO

ACTIVITY ONE (core)

Join Mrs Cooper online (<https://mskhealthresearch.com/osteoporosis-lesson-2>) and complete 'Building Blocks to HealthyBones', then complete the activity below.

Our bones require calcium, Vitamin D, and regular weight-bearing and resistance exercise for growth, development, and continued maintenance. In pairs, research the importance of each of these requirements and write why they are important in the boxes. Then rank them from most important (1) to least important (3)



Did you know? At approximately 30 years of age, you reach peak bone mass and bone density starts declining

Adequate calcium intake:

Rank: 1/2/3

Sufficient Vitamin D:

Rank: 1/2/3

Regular weight-bearing and resistance exercise: Rank: 1/2/3

ACTIVITY TWO (core)

Brainstorm 'ways to keep our bones healthy', using Mrs Cooper's 'What About Unhealthy Bones?' (<https://mskhealthresearch.com/osteoporosis-lesson-2>) as a starting point. Then add 'what might happen if our bones aren't kept healthy?' to your brainstorm. There is space below for your brainstorm. Record the most important points below:

LESSON TWO

ACTIVITY THREE (core)

3(a) Watch the video on Osteoporosis as a class, recording any interesting points as you go!
https://youtu.be/pkGX_RJ_sXA

3(b) Using the information from the video, Mrs Cooper's 'Osteoporosis Fact Sheet' (<https://mshhealthresearch.com/osteoporosis-lesson-2>) and the websites below as a starting point, research Osteoporosis, and identify the key points to present to another group, explaining the following:

1. What is the cause of Osteoporosis?
2. What parts of a bone are affected by Osteoporosis?
3. What are the effects of Osteoporosis?
4. How can Osteoporosis be prevented?

<https://www.iofbonehealth.org/osteoporosis>

<https://healthybonesaustralia.org.au>

Cause?

Parts of bone affected?

Effects?

Prevention?

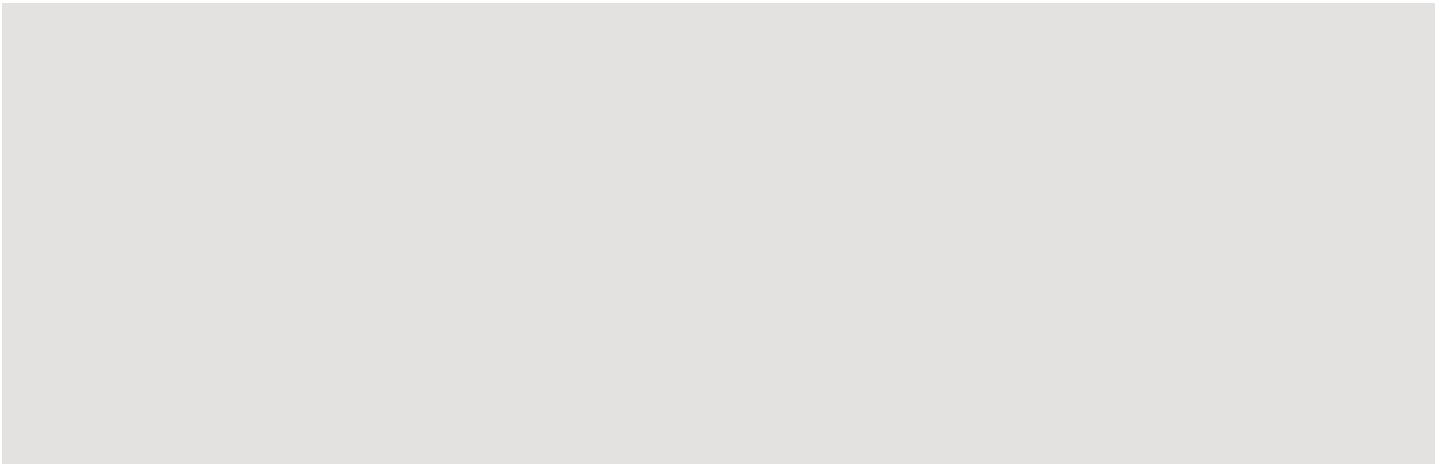


LESSON TWO

ACTIVITY FOUR (extension)

1. Read the Know Your Bones Survey: <https://start.knowyourbones.org.au/home>.
2. After reading the survey, critique and create a pro and con list on the appropriateness of the survey. This should be based on your age group, outlining what is likely to be applicable to you and what is not.
3. Then develop an age-appropriate survey that is more relevant for you and your peers. Include the following: age-appropriate questions, information on barriers to healthy bones as outlined by Mrs Cooper, creative and interesting format, ways to communicate results, and recommendations of local services available to improve results. This can be created in an online quiz format or in your workbooks.

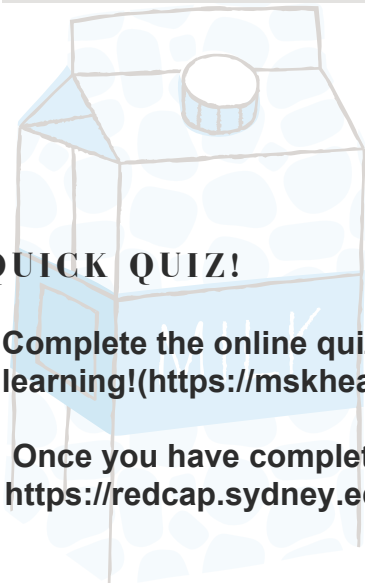
Brainstorming and planning space for Activity Four:



QUICK QUIZ!

Complete the online quiz with Mrs Cooper at the end of the lesson to demonstrate your learning! (<https://mskhealthresearch.com/osteoporosis-lesson-2>)

Once you have completed Lesson 2 please complete this short survey
<https://redcap.sydney.edu.au/surveys/?s=DCDLFAXDXKW7F9NF>



LESSON THREE

ACTIVITY ONE (core)

Using the World Health Organisation's definition of health provided by Mrs Cooper (<https://mskhealthresearch.com/osteoporosis-lesson-3>), develop your own personal definition of health and record it below:



*It is health that
is real wealth
and not pieces of
gold and silver"*

*Mahatma
Gandhi*

ACTIVITY TWO (core)

Using your definition above as a guide, find three marketing campaigns or influences that would positively impact health and three that would negatively impact health. Justify why these have been chosen and how they impact in the space provided on the following page.



LESSON THREE

ACTIVITY TWO (continued)

Positive health impact
e.g Slip.Slop, Slap




Negative health impact
e.g. fast foods company ads



ACTIVITY THREE (core)

3(a) Complete Mrs Cooper's 'Good Health vs Poor Health' table (<https://mskhealthresearch.com/osteoporosis-lesson-3>) and brainstorm the characteristics of someone who shows good physical health, compared to someone who does not. Record these on the post-it notes below.

Good health
e.g gets 8+ hours of sleep



Poor health
e.g. doesn't exercise



3(b extension) Compare the developed lists above to other countries around the world where good and poor physical health may be impacted by social or cultural practices within different communities and discuss what these may be with the class.

LESSON THREE

ACTIVITY FOUR (core)

4(a) Complete Mrs Cooper's 'Physically Healthy Day' (<https://mskhealthresearch.com/osteoporosis-lesson-3>), identify what a physically healthy students day would look like and record the examples in the table provided. Once you've filled the table in, complete the 'Sedentary Activities' slide with Mrs Cooper. This website might help (<https://www.health.gov.au/health-topics/physical-activity-and-exercise>)

Activity/ Health Dimension	How much time should be spent doing this each day (Guideline):
Physical Activity	
Screen time	
Sedentary activities	
Sleep	

4(b extension) In pairs, research what these guidelines look like in other countries across the globe. Compare the guidelines of two other countries and record the differences below:

Country 1

Country 2

ACTIVITY FIVE (core)

5(a) Using the recommended physical activity guidelines completed in Activity Four as well as Mrs Cooper's 'Activity Ideas', complete the table on the next page. You will need to identify and outline the following:

- What types of physical activities could be completed to meet the guidelines?
- What kind of physical responses the body would have to each of the activities?



LESSON THREE



ACTIVITY FIVE CON'T

Physical Activity Guideline (from Activity 4)	Activities to meet guideline Eg: running.	Physical responses of the body to activity. Eg: improved cardiovascular endurance.

5(b extension) Outline how the guidelines about physical activity could be incorporated into a student in Australia's week compared to one of the countries selected in Activity Four.

Australian student:

Student from selected country:



LESSON THREE

ACTIVITY SIX (core)

Using the research of recommended physical activity guidelines, combined with the information about the importance of exercise for reducing Osteoporosis in the website provided, create a recommended training program for yourself or a young family member of yours (brother/sister/cousin), selecting five activities and exercises best suited for building healthy bones. The program needs to outline:

- The age of the family member,
- Five varied types of activities/exercises suited to the family member,
- Why the activities are good for building healthy bones,
- Location suggestions for activities/exercises,
- Further recommendations and suggestions for the future.

Present this program in a presentation program of your choice: Microsoft Publisher, Canva, Adobe Sparke.

**Remember to complete the online quiz with Mrs Cooper at the end of the lesson!
(<https://mskhealthresearch.com/osteoporosis-lesson-3>)**

**Once you have completed Lesson 3 please complete this short survey
<https://redcap.sydney.edu.au/surveys/?s=TEWXXTR3XEPEPJM>**

LESSON FOUR

ACTIVITY ONE (core)

1(a) Discuss and identify on the post-it notes below what is needed to supplement a child's health, in addition components outlined in Lesson Three (physical activity, restricted sedentary time, sleep and reduced screentime), to ensure bones are healthy. Research what community or school programs exist in Metropolitan areas to encourage and support these choices, record these below.

What programs exist?

Other things which improve health?

1(b extension) Compare these programs to other programs rurally and internationally, outlining the similarities and differences between metropolitan, rural and international programs. As a class, discuss why you think these differences occur and record the most common responses below:

ACTIVITY TWO (core)

Compare and contrast the Australian Guide to Healthy Eating with the Aboriginal and Torres Strait Islander Guide to Healthy Eating using Mrs Cooper's 'Cultural Differences' (<https://mskhealthresearch.com/osteoporosis-lesson-4>) slides and answer the following:

What are the similarities?

What are the differences?

List three barriers Aboriginal and Torres Strait Islanders may have to meeting the Guidelines:

LESSON FOUR

ACTIVITY THREE (core)

Using the Australian Dietary Guidelines (<https://www.eatforhealth.gov.au/guidelines/about-australian-dietary-guidelines>) and Mrs Cooper's 'Australian Dietary Guidelines' information (<https://mskhealthresearch.com/osteoporosis-lesson-4>), identify the five Australian dietary guidelines and record responses in the table:

Guideline	Australian Dietary Guideline explanation
Guideline 1	
Guideline 2	
Guideline 3	
Guideline 4	
Guideline 5	

ACTIVITY FOUR (core)

Using this website (<https://healthybonesaustralia.org.au/your-bone-health/calcium/>) as well as Mrs Cooper's 'Calcium and Bones' slide (<https://mskhealthresearch.com/osteoporosis-lesson-4>), research how a person's calcium intake impacts their healthy bones, recording the answers below:



LESSON FOUR

ACTIVITY FIVE (core)

In pairs, based on the training plan developed in Lesson Three, create a dietary plan for the young student to supplement the outlined exercise regime, using the Australian Guide to Healthy Eating and the websites provided for assistance. Mrs Cooper's 'Making Healthy Choices' (<https://mskhealthresearch.com/osteoporosis-lesson-4>) will also help you. This can be presented in any format of choice.

Meal	Meal options
Breakfast	
Lunch	
Dinner	
Snacks	
Water	

ACTIVITY SIX (extension)

In the table above, outline what barriers may exist within the dietary plan if it was applied rurally and internationally (eg: lack of clean water, no fresh fruit and vegetables). Add what modifications could be implemented to adapt to these potential barriers in the table above and highlight these.

Don't forget to complete your end of lesson quiz with Mrs Cooper!
<https://mskhealthresearch.com/osteoporosis-lesson-4>

Once you have completed Lesson 4 please complete this short survey
<https://redcap.sydney.edu.au/surveys/?s=87XE33Y9P97EEL3M>

