

OSTEOPOROSIS AWARENESS WORKBOOK

PDHPE STAGE 4 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.

WITHIN THIS
WORKBOOK:

02 *LESSON ONE*

05 *LESSON TWO*

08 *LESSON THREE*

11 *LESSON FOUR*

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.

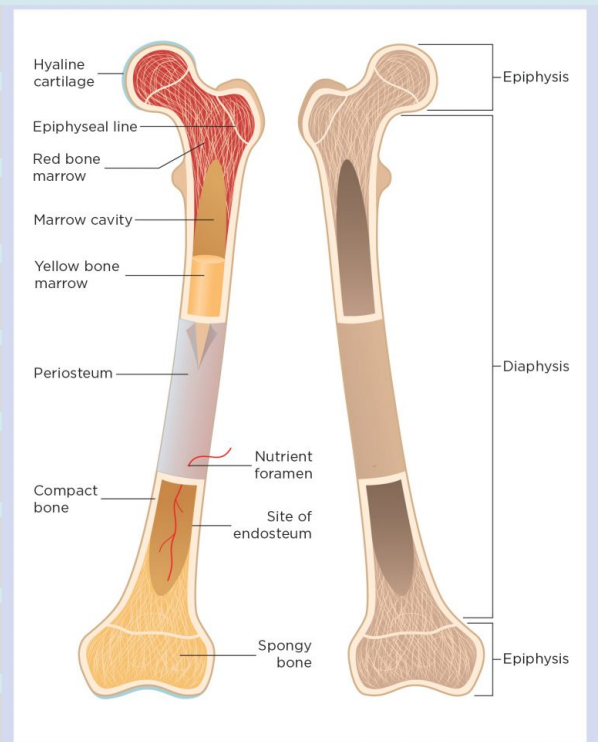
Type of bone:	Function of bone:



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 (extension)

In pairs, using this YouTube clip as a guide (<https://youtu.be/UYSOe06j4ps>), create your own 'All About Bones' song. Your song needs to include:

- A definition of what bones are.
- Why bones are important to humans.
- The different parts of a bone and the function of them.



You can record your song using Flipgrid, or you can write your lyrics below and present them using Canva or another publishing resource.

Planning Space for 'all about bones' song:

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=WJDH78DEDL93JNEC>

LESSON TWO

ACTIVITY ONE (core)

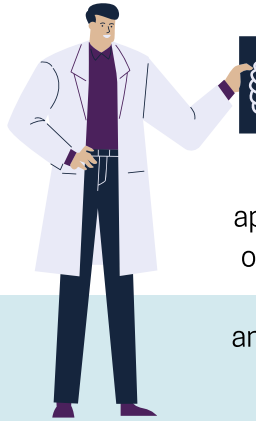
1(a) Online activities

Join Mrs Cooper online and complete 'Building Blocks to Healthy Bones', then complete the activity below.

(<https://mskhealthresearch.com/osteoporosis-lesson-2>)

1(b) 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?' as a starting point (<https://mskhealthresearch.com/osteoporosis-lesson-2>). Now, 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 animation, Mrs Cooper's 'Osteoporosis Fact Sheet' (<https://mskhealthresearch.com/osteoporosis-lesson-2>) and these websites:

- <https://www.osteoporosis.foundation/patients/about-osteoporosis>
- <https://healthybonesaustralia.org.au/>

As a starting point, research Osteoporosis, and identify the key points to present to another group, explaining the following:

What is the cause of Osteoporosis?

What types of bone are affected?

What are the effects of Osteoporosis?

How can Osteoporosis be prevented?



LESSON TWO

ACTIVITY FOUR (extension)

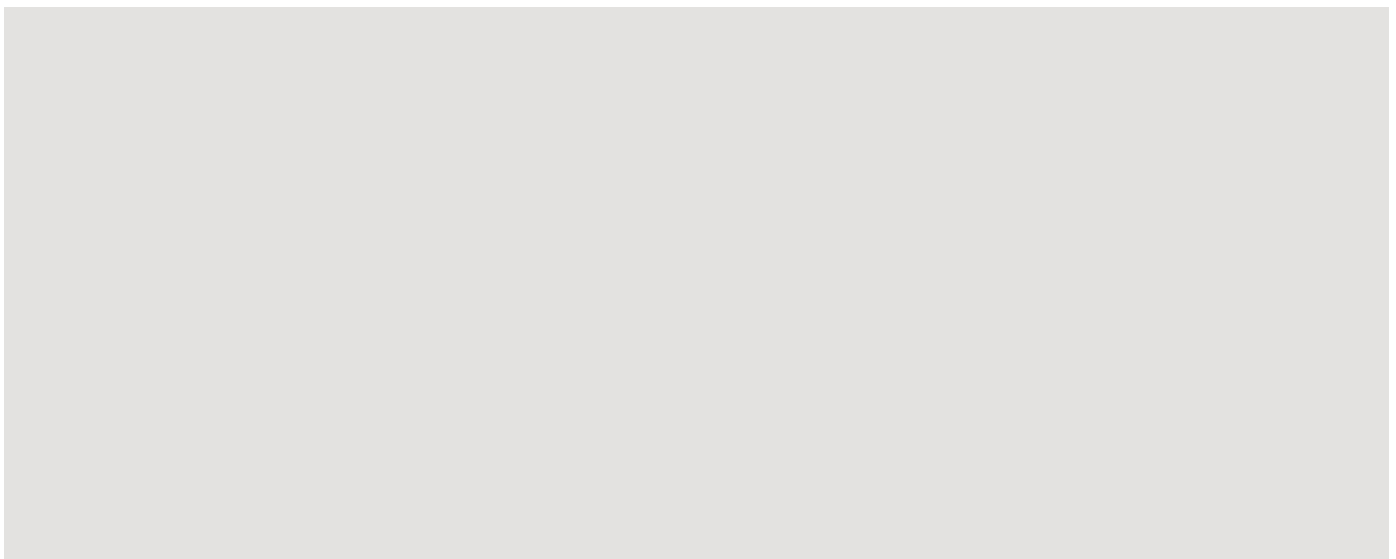
Using your research from Activity Three, create an advertisement for a selected age group within society, aiming to educate them about Osteoporosis. Age groups are: 10 - 13 years, 13 - 15 years, 15 - 17 years, 17 - 19 years or 19 - 29 years.

Include the following in your advertisement:

- Relevant information about Osteoporosis for the selected age group.
- What peer pressures may impact the selected age groups decisions around Osteoporosis.
- Images that will capture the age groups attention and educate them about Osteoporosis.

Presentation options for advertisement could include **Microsoft Publisher, Canva or Adobe Sparke**, depending on what's available! If not, a hand drawn advertisement would be great.

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=PKACHJDCDTXMLP4T>

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)

Complete Mrs Cooper's 'Good Health vs Poor Health' table and brainstorm the characteristics of someone who shows good physical health, compared to someone who does not. Record these on the post-it notes on the next page.



LESSON THREE

ACTIVITY TWO CON'T

GOOD HEALTH

eg: gets 8+ hours of sleep



POOR HEALTH

eg: doesn't exercise



ACTIVITY THREE (core)

Complete Mrs Cooper's 'Physically Healthy Day', 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. (<https://mskhealthresearch.com/osteoporosis-lesson-3>)

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



LESSON THREE

ACTIVITY FOUR (core)

Using the recommended physical activity guidelines completed in Activity Three as well as Mrs Cooper's 'Activity Ideas' (<https://mskhealthresearch.com/osteoporosis-lesson-3>), complete the table below.

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
- how the guidelines could be incorporated into a Year 7 or Year 8 students week.

Physical activity guideline	Activities to meet guideline eg. running	Physical responses of the body to activity eg. improved cardiovascular endurance

ACTIVITY FIVE (extension)

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 an infographic showing five activities and exercises best suited for building healthy bones in kids. The infographic must include a catch phrase, outline the five different activities and be aimed at kids your age. If you're stuck for ideas, use the Sport Australia website below as a starting point.

Brainstorming and planning space for Activity Five:

<https://healthybonesaustralia.org.au/your-bone-health/exercise-bone-health/>

<https://www.sportaus.gov.au>

Complete the online quiz with Mrs Cooper at the end of the lesson to demonstrate your learning!(<https://mskhealthresearch.com/osteoporosis-lesson-3>)

Once you have completed Lesson 3 please complete this short survey

<https://redcap.sydney.edu.au/surveys/?s=4KDLPXAENX9KDMCE>



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 to components outlined in Lesson Three (physical activity, restricted sedentary time, sleep and reduced screentime), to ensure bones are healthy. e.g good diet

A large yellow rectangular sticky note intended for students to write their responses to question 1(a).

A second large yellow rectangular sticky note intended for students to write their responses to question 1(a).

1(b) Using your answers above and Mrs Cooper's 'Cool Fact' (<https://mskhealthresearch.com/osteoporosis-lesson-4>), research what community or school programs exist in Australia to encourage and support these choices, record these below.

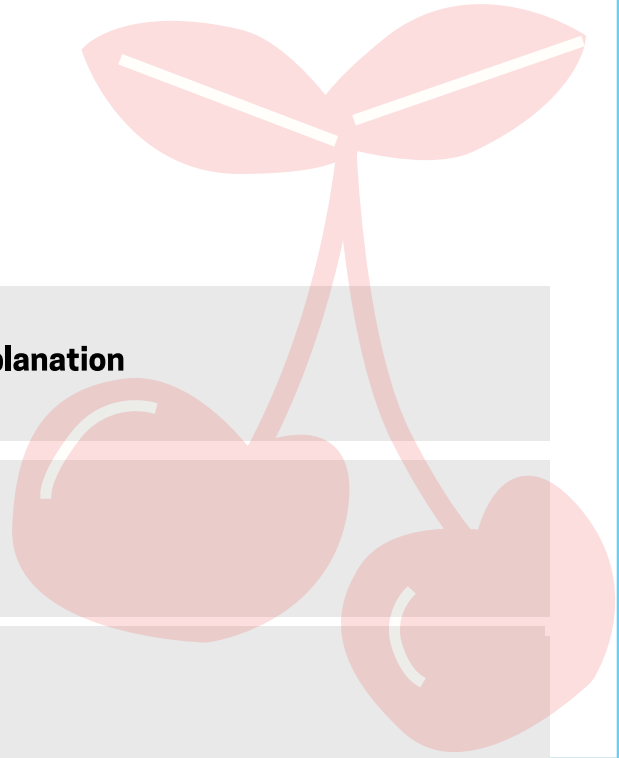
A large light blue rectangular area intended for students to record their research findings for question 1(b).

ACTIVITY TWO (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 on the next page.



LESSON FOUR



ACTIVITY TWO CONT.

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

ACTIVITY THREE (core) 3(a) Using the website below 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:

3(b) Research what food groups are most important for growing healthy bones, recording your answers below:



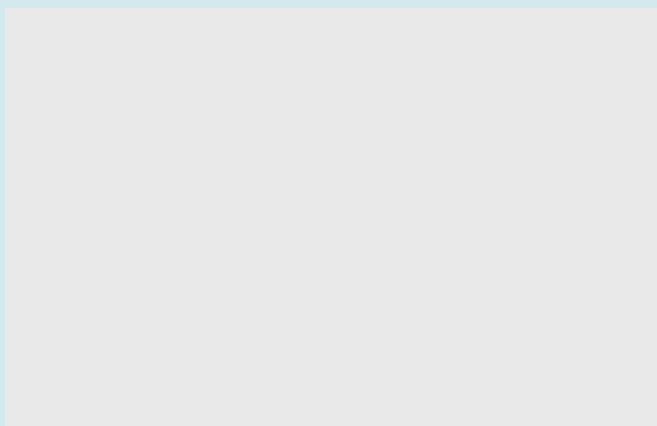
LESSON FOUR

ACTIVITY FOUR (core)

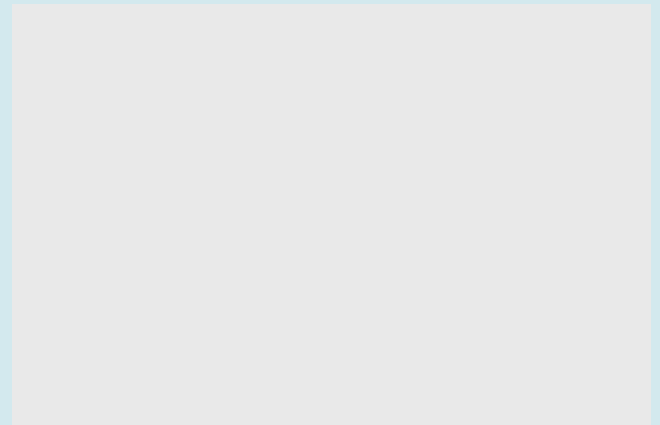
Draw what breakfast and dinner plates should look like for kids and create an example lunchbox, justifying the inclusions in relation to foods for building healthy bones, using the Australian Guide to Healthy Eating diagram (<https://www.eatforhealth.gov.au/guidelines/australian-guide-healthy-eating>) and Mrs Cooper's 'Making Healthy Choices' (<https://mskhealthresearch.com/osteoporosis-lesson-4>) for assistance.



DINNER PLATE

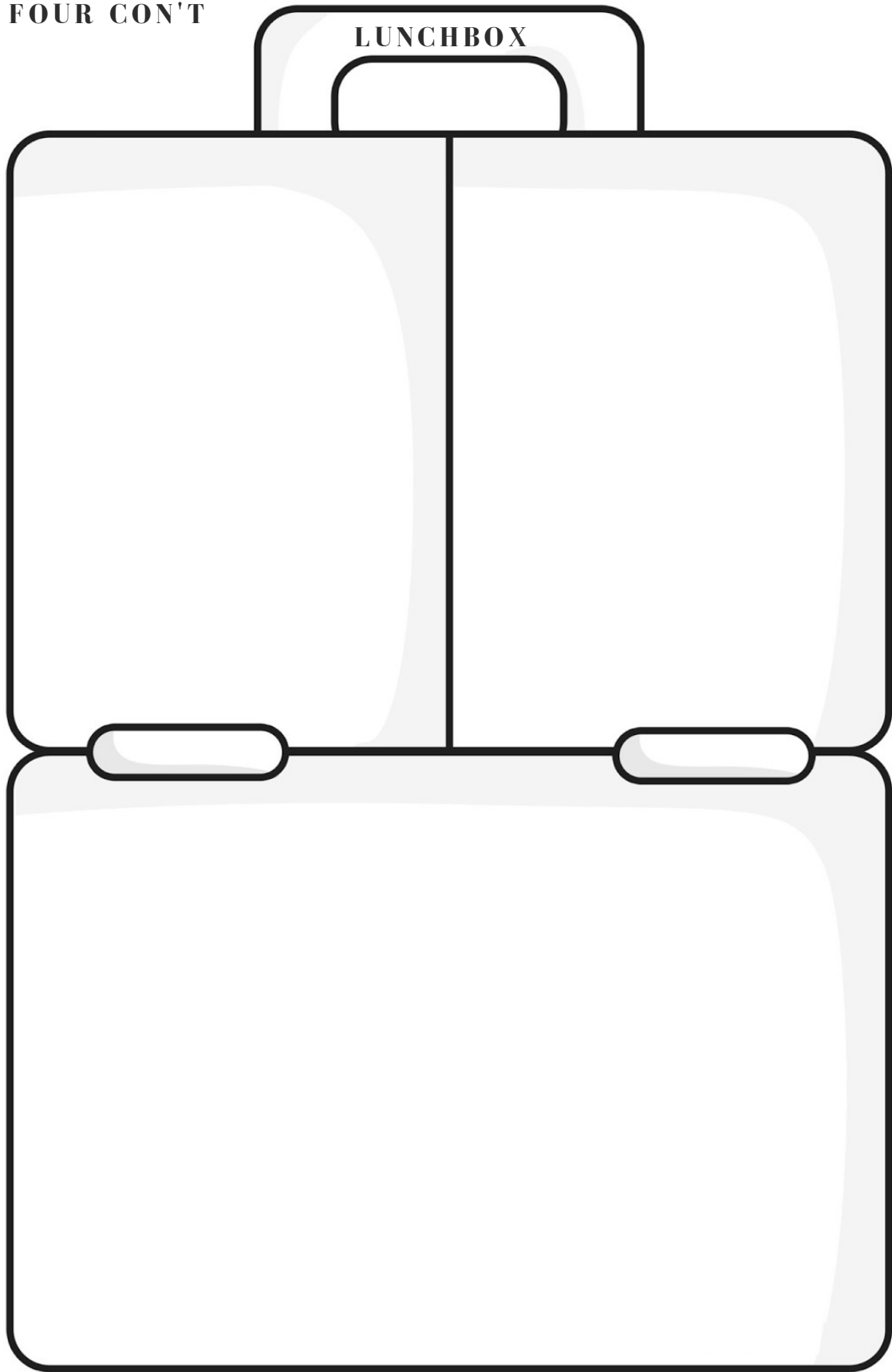


BREAKFAST PLATE



**LESSON
FOUR**

ACTIVITY FOUR CON'T



LESSON FOUR

ACTIVITY FIVE (extension)

In small groups, create a new diet focused community initiative and develop a radio advertisement or brochure to advertise it, expressing the importance of diet in building healthy bones and its link to prevention of Osteoporosis across the lifespan of a person.

Include the following:

- A slogan for the community initiative
- What types of foods are required to build healthy bones
- How much of each food is required to build healthy bones
- How each food is linked to building healthy bones

For the brochure, suggestions for creation include Canva, Adobe Sparke, Microsoft Publisher or any other accessible publishing resources. For the radio advertisement, an easy online voice recorder website is below (<https://online-voice-recorder.com/>).

Slogan ideas

Types of food required to build healthy bones?

How much of each food?

How each food is linked to healthy bones?

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=9KKJNHW9XKJJRHDD>