

# 'Boost Your Bones' Challenge Badge





## **Boost Your Bones Badge**

### **Guidance notes for Leaders**

See Background information for guidance, it is important that Rainbows understand both the dietary and exercise messages.

In order to get the Boost your Bones badge, Rainbows could do the following activities:

#### **In Rainbows:**

- Discuss Activity 1 as a group – ‘Eatwell Plate’
- Discuss Activity 2 as a group – ‘Bones’
- Do Activity 4 as a group – ‘Obstacle Race’
- Do Activity 6 individually – Cotton bud skeleton

#### **At Home:**

- Rainbows can do Activity 3 ‘Collecting Labels’ with help from home (use Resource sheet 1 for this activity)

#### **OR**

- Rainbows can do Activity 5 ‘Strong Healthy Bones’ leaflet.

## Boost Your Bones Badge

### **Rainbows 4-7 years**

*focusing on the Learn area of the Rainbow jigsaw.*



Rainbows will learn the importance of a healthy balanced diet and what our bodies need to make strong bones.

### **Background Information to support activities**

A healthy balanced diet provides our body and bones with the vitamins, minerals and energy needed to keep us healthy.

A healthy balanced diet includes foods from the 4 main food groups:

- Fruit and vegetables.
- Carbohydrates foods like bread, potatoes, pasta and cereals.
- Milk and dairy products.
- Protein foods.

The fifth food group includes those foods and drinks that are high in fat and/or sugar. These foods should be kept to treats, once or twice per week.

Bones are growing at their fastest rate from childhood to adolescence and during this time Rainbows should maximise their bone strength. Rainbows can “bank” their bone strength up to their mid-to late twenties.

Essential ingredients to building strong bones are:

- calcium rich foods such as milk and dairy foods
- exercise such as running, skipping, walking, dancing, team sports
- sunlight

Weight bearing exercise such as skipping, jumping, jogging, dancing and even fast walking are all good exercises because these exercises give bones a boost and strengthen them. These types of exercises are called weight bearing exercises as we are supporting the weight of our own body. Weight bearing exercise is the best type of exercise to strengthen our bones.

**Activity 1: Eatwell Plate - getting the balance right**

Resources required: Picture of eatwell plate (copy at end of the Rainbow section).

Give the Brownies a paper plate and ask them to fill it with pictures of food they like to eat.

Show a picture of the eatwell plate.

Explain this plate shows all the different types of food that we should eat for a healthy diet.

Highlight that there are five types of foods or food groups on the plate.

Explain the names and colours of the five food groups.

Explain a healthy diet gives us the energy our bodies need and helps keep our bodies and bones healthy.

## The eatwell plate

Use the eatwell plate to help you get the balance right. It shows how much of what you eat should come from each food group.



Public Health England in association with the Welsh Government, the Scottish Government and the Food Standards Agency in Northern Ireland

© Government of Wales 2013

*Suggested questions for discussion:*

Q. Which 2 food groups make up the largest parts of the plate?

A. *Fruit and vegetables* (green section) and *Bread, rice, potatoes, pasta and other starchy foods* (yellow section) make up the largest part of the plate. These should therefore make up the largest part of what we eat.

Q. Ask for examples of foods that belong to these two food groups (fruit and vegetables and bread, rice, potatoes, pasta and other starchy foods)

A. All fruit and vegetables including fresh, frozen, dried and juiced belong to the fruit and vegetables group. This group does not include potatoes. All varieties of bread, rice, potatoes, pasta, cereals, couscous etc belong to the yellow group.

Q. Which food group makes up the smallest part of the plate?

A. *Foods and drinks high in fat and/or high in sugar* (purple section). Explain these foods should be kept as treats.

Q. Ask for examples of foods that belong to the food and drinks high in fat and/or sugar food group?

A. Examples of foods and drinks high in fat and/or sugar include sugary drinks, biscuits, cakes, buns, crisps.

*Explain* the blue food group is the milk and dairy foods food group these foods are rich in calcium and this help to make our bones strong.

Q: Which foods are included in the milk and dairy foods food group?

A: The *milk and dairy foods food group* includes milk, cheese and yoghurts. Explain that children should include foods from this food group every day.

## Activity 2: Bones

Resources required: Small tub of jelly, plate and Jenga bricks

*Explain* that our bones protect our bodies, give them shape and help us move. *Explain* that without our bones our bodies would look very different and may even look like jelly. *Show* the Rainbows the jelly on a plate.

Suggested questions for discussion:

Q. How many bones are in an adult's body?

A. There are 206 bones in an adult's body. When we are born we have about 300 bones and these grow together to form the 206 in an adults body.

Q. Which bone in the body is the strongest?

A. The strongest bone in the body is the thigh bone, it is stronger than concrete.

*Explain* that our bones need 3 things to make them strong:

1. Calcium rich foods such as milk and dairy foods, we should include 2-3 servings of these each day
2. Exercise such as running, skipping, walking, dancing, team sports
3. Sunlight

Highlight that it is important that we build strong bone now when we are young because we only have until we are about 25 years to build **our** bones.

*Ask the girls to build* a strong tower of jenga bricks in front of the Rainbows which would be unlikely to fall over.

*Explain* that if we eat milk and dairy foods, exercise and enjoy some time in the sun our bones will be strong like the jenga breaks.

*Remove* some bricks from the jenga tower so that it is weaker and more likely to fall over.

*Explain* that if we don't have enough milk and dairy foods, exercise or spend enough time in the sun our bones become weak and are more likely to break when we are older. Ask for a volunteer to knock down the bricks demonstrating how fragile they are.



**Activity 3: Collecting labels (home activity)**

Provide *Resource Sheet 1* (see sheet at end of section) to be completed at home. Explain that they should collect 6 different labels from foods which belong to the milk and dairy foods food group. They should cut these labels out with help from their parents, stick them to the activity sheet and return them to a leader.





### Activity 4 – Obstacle Course

Resources required:- Skipping ropes (1 per team)  
Bean Bags (1 per team)  
Balls (1 per team)  
Bucket/Waste paper bin (1 per team)/Basket

#### **The Obstacle Course**

- Split the Rainbows in to 2 – 3 teams depending on numbers and space
- Get teams to form a single line behind one another at the starting line
- Set out the obstacle course as follows and explain to the Rainbows what to do

On 'Go' Rainbows run to the first obstacle station

First obstacle station – Do **X10** Star Jumps

Run to second obstacle station

Second obstacle station – Throw the ball into the bin/basket

Run to the third obstacle station

Third obstacle station – Pick up the skipping rope and skip **X10** (younger girls can jump **x10** if they cannot skip or make the skipping rope into a circle for Rainbows to jump in and out of)

Run to the fourth obstacle station

Fourth obstacle station – Put the bean bag on your head and run to the fifth obstacle station

Fifth obstacle station – Hop **x5** on the spot

Run back to the starting line

Next team member goes.



### **Activity 5 – Take home activity**

Ask the Rainbows to take the 'Strong Healthy Bones' leaflet home (copy at end of this section) and tell someone at home what they have learned about keeping bones healthy.

### Activity 6: Cotton bud skeleton

Ask the girls to build a skeleton out of cotton buds



#### **Materials:**

- Black (or other colour) construction paper
- White construction paper skulls
- 1 whole q tip per child, 22 half q tips per child
- Glue
- Black markers

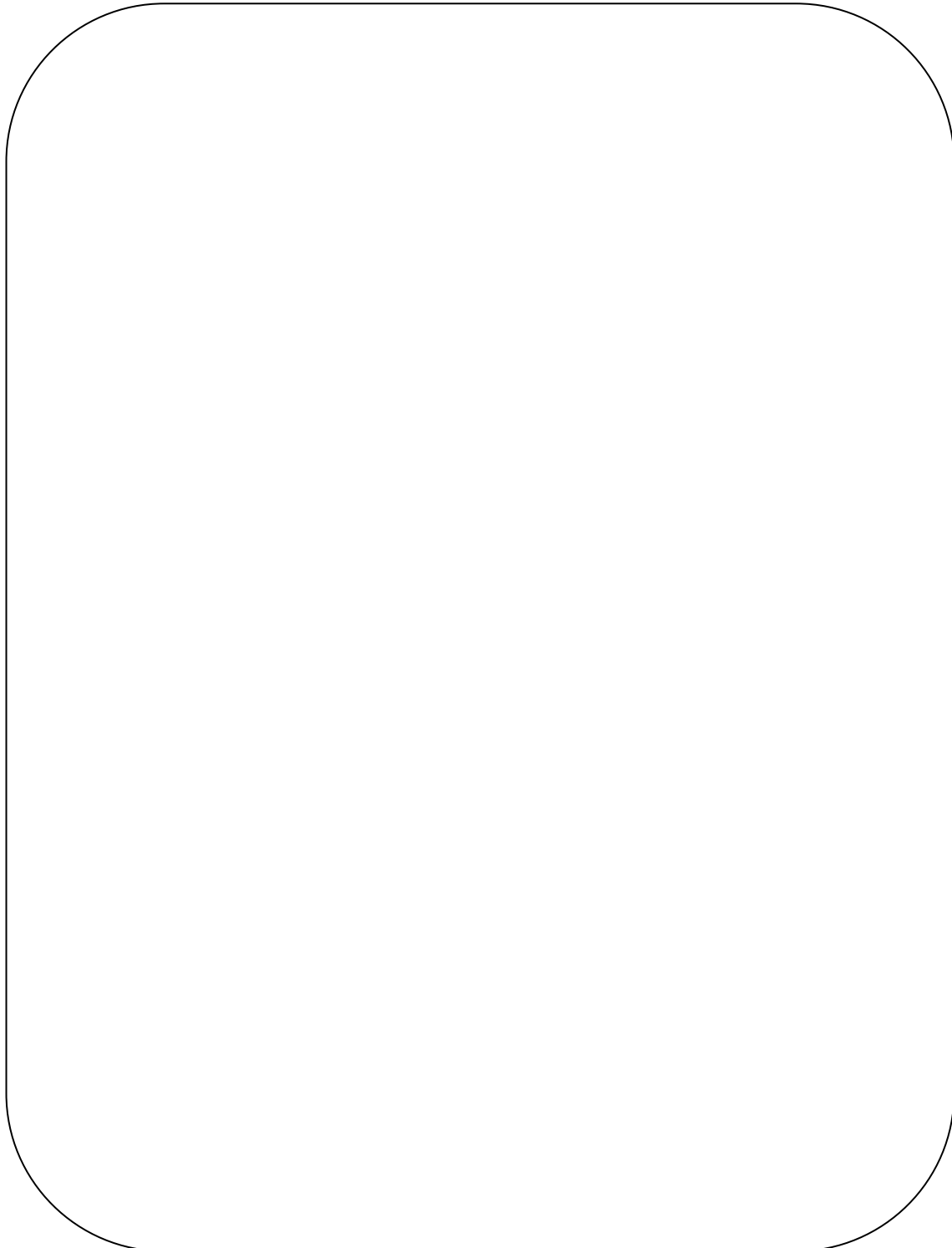
#### **Approach:**

1. Have the children grab a piece of black (or other colour) construction paper, skull and the Q Tips.
2. Using sample as guide, glue Q Tips to paper accordingly.
3. Glue skull onto paper
4. Draw eyes, nose and mouth onto skull

## Resource sheet 1

Name \_\_\_\_\_

Collect labels from 6 foods which belong to the milk and dairy foods food group. Remember these foods help make our bones strong and we should include 2 or 3 portions each day. Cut these labels out with help from an adult and stick these inside the square below.



If your child is on a special diet speak to your child's Registered Paediatric Dietitian or GP to ensure they are getting enough calcium.

### Vitamin D

Vitamin D helps your body make the most of the calcium you eat. About 90% of our vitamin D comes from the sunlight which our bodies then use to make vitamin D in our skin. There isn't currently enough evidence to recommend how much sunlight children need. By your child regularly enjoying some time outside during the summer months you can help ensure they are getting enough vitamin D. Babies should always be kept out of direct sunlight. Vitamin D can also be found in margarine, eggs, oily fish (e.g. herring or sardines), cod liver oil and fortified breakfast cereals. It is recommended that children between the ages of 6 months and 5 years of age take vitamin drops to help meet their total daily requirements for vitamin D of 7-8.5 microgrammes (µg).

### A Healthy Balanced Diet

Calcium and vitamin D are essential to build healthy bones but so is a healthy balanced diet. Encourage your child to eat a varied diet and include foods from the 4 main food groups:

- Fruit and vegetables, including 5 portions daily.
- Carbohydrate foods like bread, potatoes, pasta and cereals. Try to offer something from this food group at each meal.
- Milk and other dairy products, try to offer 2 or 3 servings each day.
- Protein foods like meat, fish, eggs, pulses, nuts and seeds. Try to include at least 2 servings from this group each day.

It is also important to make sure your child drinks sufficient fluid, 6-8 cups of fluid is recommended per day. Water, milk and sugar free squashes are the best drinks to choose.

### Exercise and strong bones

Bones love to exercise. Exercises that are particularly good for building strong bones are **weight bearing exercises**. Weight bearing exercise is any physical activity where your child is taking the weight of their own body.

Some good examples of weight bearing exercises are:

- Dancing or exercises to music are fun ways to boost bone health
- Running or even walking help to build bone in the spine and hips
- Team sports such as football or netball are not only good weight bearing exercises but they also encourage all children to take part
- Skipping is a good bone builder, aim for 5 minutes each day



Image designed by Amy Mathews  
 Illustration © North Antrim Primary School

Further copies of this leaflet can be obtained from:  
 Health Improvement/Community Development  
 Service, Spruce House, Cushendall Road,  
 Ballymena Tel: 028 2563 5575



Image designed by Adam Karlsen from Braughall Primary School



Email: [info@northerntrust.hscni.net](mailto:info@northerntrust.hscni.net)  
 Web: [www.northerntrust.hscni.net](http://www.northerntrust.hscni.net)

This document is available, on request, in accessible formats, including Braille, CD, audio cassette and minority languages.

MPC0002360508EN 13K.C00

**Strong Healthy Bones**  
 A guide for promoting  
 your child's bone health



### Bones and the skeleton

Bones and the skeleton form the framework of our bodies. Bones help us to move and protect our internal organs. Without bones we would look like very different creatures.

A baby's body has many more bones than an adult's, some of these bones grow together to form the 206 bones that we have as adults.

Our bones are very much alive, growing and changing all the time. Although we may reach our full height by our late teens, our bones are still growing in strength (density) up until our twenties.

### Why is bone health so important for children?

During childhood and teenage years your child should build as much bone as possible.

### So now is the time to maximise your child's bone strength and density!

Ensuring your child builds strong bones in childhood and adolescence will lower their chances of developing osteoporosis in later life. Osteoporosis is the fragile bone disease that can lead to possible fractures in later life.

Although our bone strength is mainly decided by our genes, if children are encouraged to take plenty of exercise and eat a well balanced calcium rich diet, they can still build strong healthy bones.

### Food for your child's bones

#### Calcium

To build long lasting bones your child's diet needs to include enough calcium. Calcium gives strength and density to our bones and teeth.

#### How much calcium does your child need?

Age	Daily calcium requirements 1 bone I = 60mg calcium approximately
Under 1	525mg (9 bones)
1-3 years	350mg (6 bones)
4-6 years	450mg (7½ bones)
7-10 years	550mg (9 bones)
11-18 years (girls)	800mg (13 bones)
11-18 years (boys)	1000mg (16 bones)

Our bodies can't make calcium. From birth to becoming an adult our bones gain about 1 kilogramme (kg) of calcium. By eating foods and drinks rich in calcium we can ensure we are getting enough calcium and build as much bone as possible for the future.

The best sources of calcium are milk and dairy products. **Use the table to the right to check if your child is getting enough.**

### Calcium Counter

Food	Calcium content
Milk, all types (200ml)	I I I I I
Cheese (30g)	I I I I I
Yoghurt (150g)	I I I I I
Rice Pudding (200g)	I I I
Custard (120ml)	I I
Calcium fortified cereal 1 serving (30g) e.g. <i>Cheerios, Oats and More, Frosties</i>	I to II
Calcium fortified instant hot oat cereal 1 serving (30g) e.g. <i>Ready Brek®</i> or supermarket own brand	I I I I I I
Wholemeal bread 2 large slices	I
White bread 2 large slices	I I
Calcium fortified bread 1 slice e.g. <i>Hovis best of both</i>	I I I
Baked beans small tin (220g)	I I I I
Sardines (60g)	I I I I

Adapted from "Calcium, are you getting enough?" BDA, Food allergy and Intolerance Specialist Group 2012.



# The eatwell plate

Use the eatwell plate to help you get the balance right. It shows how much of what you eat should come from each food group.





# Brownies

## Boost Your Bones Badge

### Guidance notes for Leaders

See Background information for guidance, it is important that Brownies understand both the dietary and exercise messages.

In order to get the Boost your Bones badge, Brownies could do the following activities:

#### In Brownies:

- Discuss Activity 1 as a group – ‘Eatwell Plate’
- Do Activity 2 as a group – ‘Mr Bones’
- Do Activity 4 as a group – ‘Obstacle Race’
- Do Activity 6 as individuals – Body Bones quiz
- Do Activity 7 as individuals – Pasta skeleton

#### At Home:

- Brownies can do Activity 3 ‘Menu planning’ with help from home (use Resource sheet 2 for this activity)

#### OR

- Brownies can do Activity 5 ‘Strong Healthy Bones’ leaflet.

## Boost Your Bones Badge

### ***Brownies 7-10 years***

Focusing on the *You* area of the Brownies adventure.

Brownies will learn the importance of a healthy balanced diet and what our bodies need to make strong bones.

### **Background Information to support activities**

A healthy balanced diet provides our body and bones with the vitamins, minerals and energy needed to keep us healthy.

A healthy balanced diet includes foods from the 4 main food groups:

- Fruit and vegetables, include 5 portions daily.
- Carbohydrate foods like bread, potatoes, pasta and cereals. Try to eat something from this food group at each meal.
- Milk and other dairy products, try to include 2 or 3 servings each day.
- Protein foods like meat, fish, eggs, pulses, nuts and seeds. Try to include at least 2 servings from this group each day

The fifth food group includes those foods and drinks that are high in fat and/or sugar. These foods should be kept to treats, once or twice per week.

Bones are growing at their fastest rate from childhood to adolescence and during this time Brownies should maximise their bone strength. Brownies can “bank” their bone strength up to their mid to late twenties.

Essential ingredients to building strong bones are:

- calcium rich foods such as milk and dairy foods
- exercise such as running, skipping, walking, dancing, team sports
- sunlight

Calcium gives strength and density to our bones and teeth. If we don't build strong bones our bones become fragile and can break more easily when we are older.

Exercise is one of the 3 things that make bones stronger. Children are recommended to do 60 minutes of exercise each day. Weight bearing exercise such as skipping, jumping, jogging, dancing and even fast walking are all good exercises because these exercises give bones a boost and strengthen them. These types of exercises are called weight bearing exercises as we are supporting the weight of our own body. Weight bearing exercise is the best type of exercise to strengthen our bones.

Our bones also need sunlight to make them strong. By enjoying some time outside during the months of April to Mid October this helps to build strong bones.

**Activity1: Eatwell Plate - getting the balance right**

Resources required: Paper plates, colouring pencils, picture of eatwell plate (copy at end of Brownie section)

Give each of the Brownies a paper plate and ask them to use the colouring pencils to fill the plate with foods they like to eat.

Show a picture of the eatwell plate.

Explain this plate shows all the different types of food that we should eat for a healthy diet. Explain a healthy diet gives us the energy our bodies need and helps keep our bodies and bones healthy.

Highlight that there are five types of foods or food groups on the plate.

Explain the names and colours of the five food groups.

Explain the five foods groups on the plate are different sizes and this shows us how much of what we eat should come from each food group. Those groups which make up the largest part of the plate should make up the largest part of what we eat. Those groups which make up the smallest part of the plate should make up the smallest part of what we eat.

**The eatwell plate**

Use the eatwell plate to help you get the balance right. It shows how much of what you eat should come from each food group.



Suggested questions for discussion:

Q. Which 2 food groups should make up the largest part of what we eat? (\*Hint if needed - these make up the largest parts of the plate)?

A. *Fruit and vegetables* (green section) and *Bread, rice, potatoes, pasta and other starchy foods* (yellow section) make up the largest part of the plate. These should therefore make up the largest part of what we eat.

Q. How many portions of fruit and vegetables should we eat each day?

A. We should eat 5 portions of fruit and vegetables each day. Dried, frozen, fresh and juiced fruit and vegetables all count towards our 5 a day. One glass of fruit or vegetable juice counts as one portion of fruit or vegetables but only once in the day. Fruit and vegetables help to fill us up with fibre, vitamins and minerals.

*Explain* that bread, rice, potatoes, pasta and other starchy carbohydrate foods in the yellow section should be included at each meal to give us lots of energy. They also help fill us up with fibre, vitamins and minerals.

Q. Ask for examples of foods that belong to *the bread, rice, potatoes, pasta and other starchy foods* (yellow section) food group.

A. All varieties of bread, rice, potatoes, pasta, cereals, couscous etc.

Q. Which food group should make up the smallest part of what we eat (\*Hint if needed- these make up the smallest part of the plate)?

A. *Food and drinks high in fat and/or high in sugar* (purple). Explain these foods should be kept as treats. This includes sugary drinks, biscuits, cakes, buns, crisps.

*Explain* the blue food group is the *milk and dairy foods* food group; these foods are rich in calcium. We should eat food from this group when we are young to help us build strong bones for when we are older.

Q. Which foods are included in the *milk and dairy foods* food group?

A. The *milk and dairy foods* food group includes milk, cheese and yoghurts.

*Explain* that our bones need three things to make them strong:

- calcium rich foods such as milk and dairy foods
- exercise such as running, skipping, walking, dancing, team sports
- sunlight

## **Activity 2: Mr Bones**

Resources required: Skeleton- model or puppet

Resources that may be useful to use as props to tell the story:

Calcium fortified cereals e.g. Ready Brek, Cheerios, Rice Krispies multigrain shapes

Calcium fortified breads e.g. white bread, Hovis best of both, Warburtons crusty white (*correct at time of print*)

### *Setting the scene for Mr Bones*

Explain that **you are going to tell a story about Mr Bones. Brownies should listen carefully to the story and when they hear Mr Bones doing something that will make his bones strong they should shout “Building strong bones”.**

**“I’d like to introduce you all to Mr Bones (show the skeleton puppet or model). Mr Bones has healthy strong bones, he makes sure that he gives his bones the things that they love to make them strong. He knows that if he doesn’t do this his bones will become weak and are more likely to break.**

**Mr Bones gets up early in the morning for his busy day. Mr Bones knows that breakfast is an important way to start the day and to get his body going. He loves to have a bowl of cereal and a glass of orange juice for his breakfast.**

*\*Building strong bones\*- children should identify that Mr Bones’ cereal would include milk and as this belongs to the milk and dairy foods food group these foods are rich in calcium giving strength and density to bones. Calcium helps form the honeycomb structure that makes up our bones. It may be useful to also highlight that some cereals have calcium added to them (see list above) and show the Brownies boxes of these.*

**Mr Bones is a teacher and takes the bus each day to school. After a morning of classes he’s hungry and ready for his snack at break time. His school have a healthy break time policy so he enjoys a banana and some school milk for his break.**

*\*Building strong bones\*- Brownies should identify that Mr Bones school milk belongs to the milk and dairy foods food group and increases his calcium intake. Highlight that all the children should be drinking semi-skimmed milk and so should any children over the age of 2 years.*

**Mr Bones has to head back to classes and it’s time for a P.E. lesson. As it’s a lovely sunny day Mr Bones takes the boys and girls outside to enjoy some sun.**

*\*Building strong bones\*- children should identify that the sunlight helps build strong bones. Sunlight helps our body make the most of the calcium in the foods we eat.*

**Mr Bones has a fun packed P.E. lesson planned for them with dancing, jumping and skipping. He joins in with his pupils to show them what to do.**

*\*Building strong bones\*- Brownies should identify that these types of exercises help build strong bone. Children should do at least 60 minutes of exercise each day.*

**Mr Bones then enjoys his packed lunch with the rest of the teachers in the staff room. His wife made his lunch today which includes a white ham sandwich, yoghurt and an apple.**

*\*Building strong bones\*- Brownies should identify that Mr Bones' yoghurt belongs to the milk and dairy foods food group and increases his calcium intake. It is worth also mentioning that some bread has calcium added to it (see the list on page 19 for examples) and showing some of these to the Brownies.*

**After a busy afternoon at school Mr Bones takes the bus home from school again. He remembers that his wife gave him a pot of some rice pudding today and as it's a long bus journey home he enjoys eating it on the way home.**

*\*Building strong bones\*- Brownies should identify that Mr Bones rice pudding is rich in calcium as it is prepared with milk.*

**Mr Bones arrives home from school to find his wife has his dinner prepared and on the table. Mrs Bones has prepared his favourite dinner, lasagne with cheese on top and custard for dessert.**

*\*Building strong bones\*- Brownies should identify that the cheese on Mr Bones lasagne belongs to the milk and dairy foods food group. Mr Bones has definitely eaten the 2-3 servings of milk and dairy foods recommended each day. They should also identify that custard, like rice pudding, is a milk pudding and is rich in calcium.*

**Mr Bones is ready for bed after a busy day but he knows that he has given his bones the things they love to be strong- milk and dairy foods, sunlight and exercise.**



**Activity 3: Menu planning (home activity)**

Provide the Brownies with *Resource Sheet 2* and ask them at home to plan and draw a meal to include a main course and pudding which are rich in calcium.



## Activity 4 – Obstacle Course

Resources required:-

- Skipping ropes (1 per team)
- Bean Bags (1 per team)
- Balls (1 per team)
- Bucket/Waste paper bin (1 per team)/Basket



### The Obstacle Course

- Split the Brownies in to 2 – 3 teams depending on numbers and space
- Get teams to form a single line behind one another at the starting line
- Set out the obstacle course as follows and explain to the children what to do

On 'Go' Brownies run to the first obstacle station

First obstacle station – Do **X10** Star Jumps

Run to second obstacle station

Second obstacle station – Throw the ball into the bin/basket

Run to the third obstacle station

Third obstacle station – Pick up the skipping rope and skip **X10**

Run to the fourth obstacle station

Fourth obstacle station – Put the bean bag on your head and run to the fifth obstacle station

Fifth obstacle station – Hop **x10** on the spot

Run back to the starting line

Next team member goes.

### Activity 5 – Take home activity

Ask the Brownies to take the 'Strong Healthy Bones' leaflet home and tell someone at home what they have learned about keeping bones healthy.

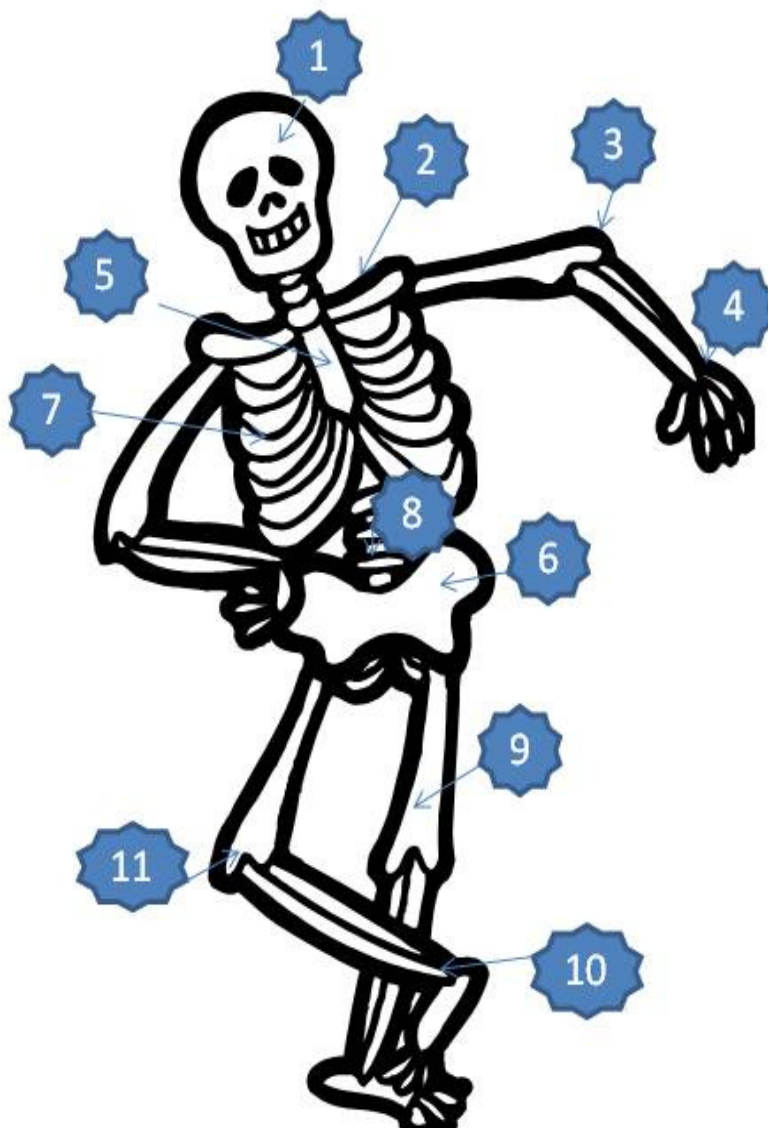
### Activity 6: Body Bones quiz

Ask the girls to complete the Body Bones quiz

# Body Bones

Can you identify the numbered parts on the skeleton? Write the number of the matching name of the bone or joint.

- \_\_\_ Wrist
- \_\_\_ Pelvis
- \_\_\_ Sternum
- \_\_\_ Knee
- \_\_\_ Clavicle
- \_\_\_ Cranium
- \_\_\_ Vertebrae
- \_\_\_ Rib Cage
- \_\_\_ Elbow
- \_\_\_ Femur
- \_\_\_ Ankle



## Quiz

Which of these are joints?  
 Circle them on the skeleton.

## Activity 7: Pasta Skeleton

Ask the girls to make a pasta skeleton



## Human Body for Kids

### Materials:

Pasta  
One Piece of Construction Paper  
Glue  
Marker

### Approach:

For younger children, prepare ahead of time by roughly drawing the skeleton as an outline for them to follow

Pour the pasta bits in a big bowl from which the kids to choose their “bones”

Have the children grab a piece of construction paper

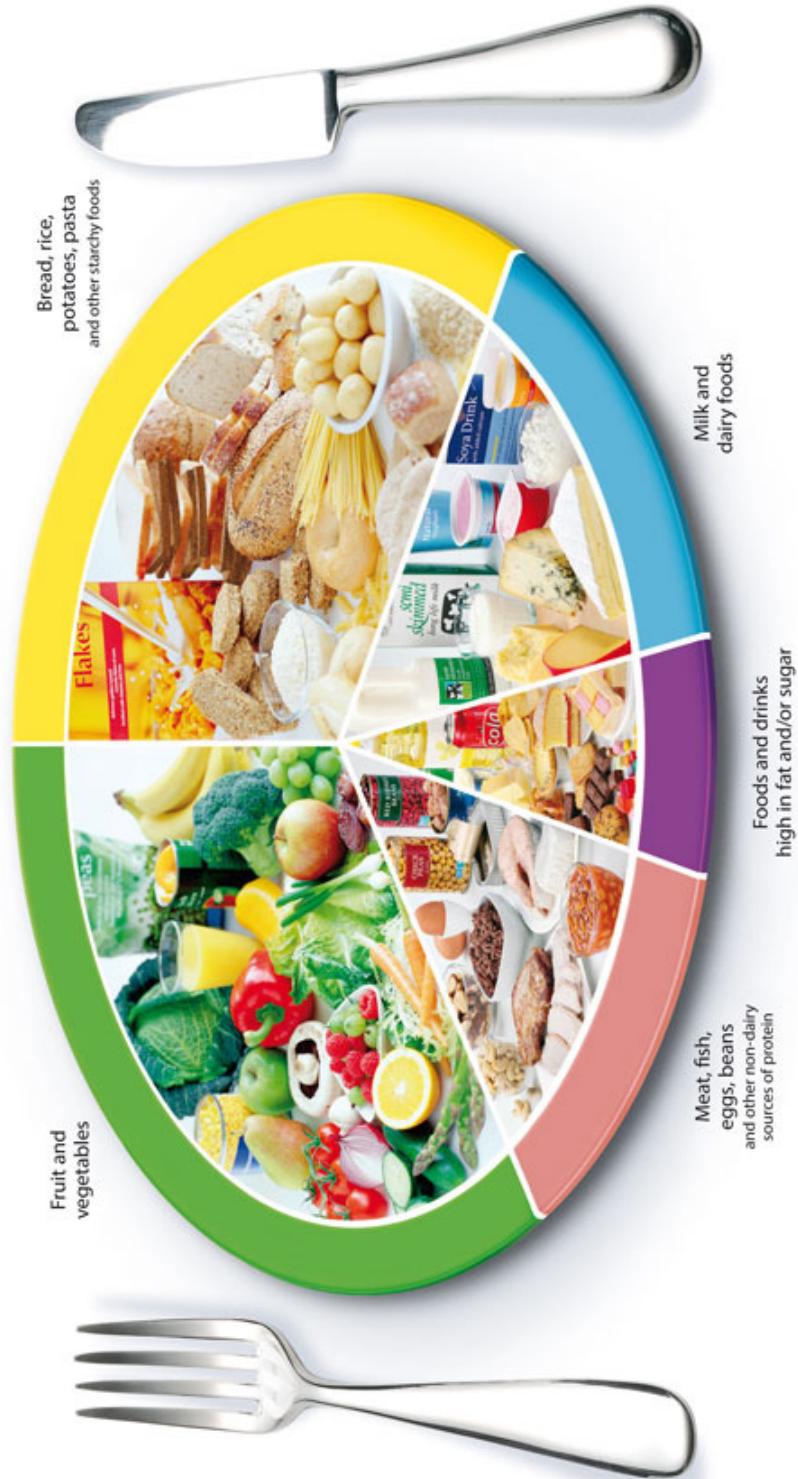
Invite them to glue the bones onto the skeleton body as seen fit

Allow time to dry



# The eatwell plate

Use the eatwell plate to help you get the balance right. It shows how much of what you eat should come from each food group.



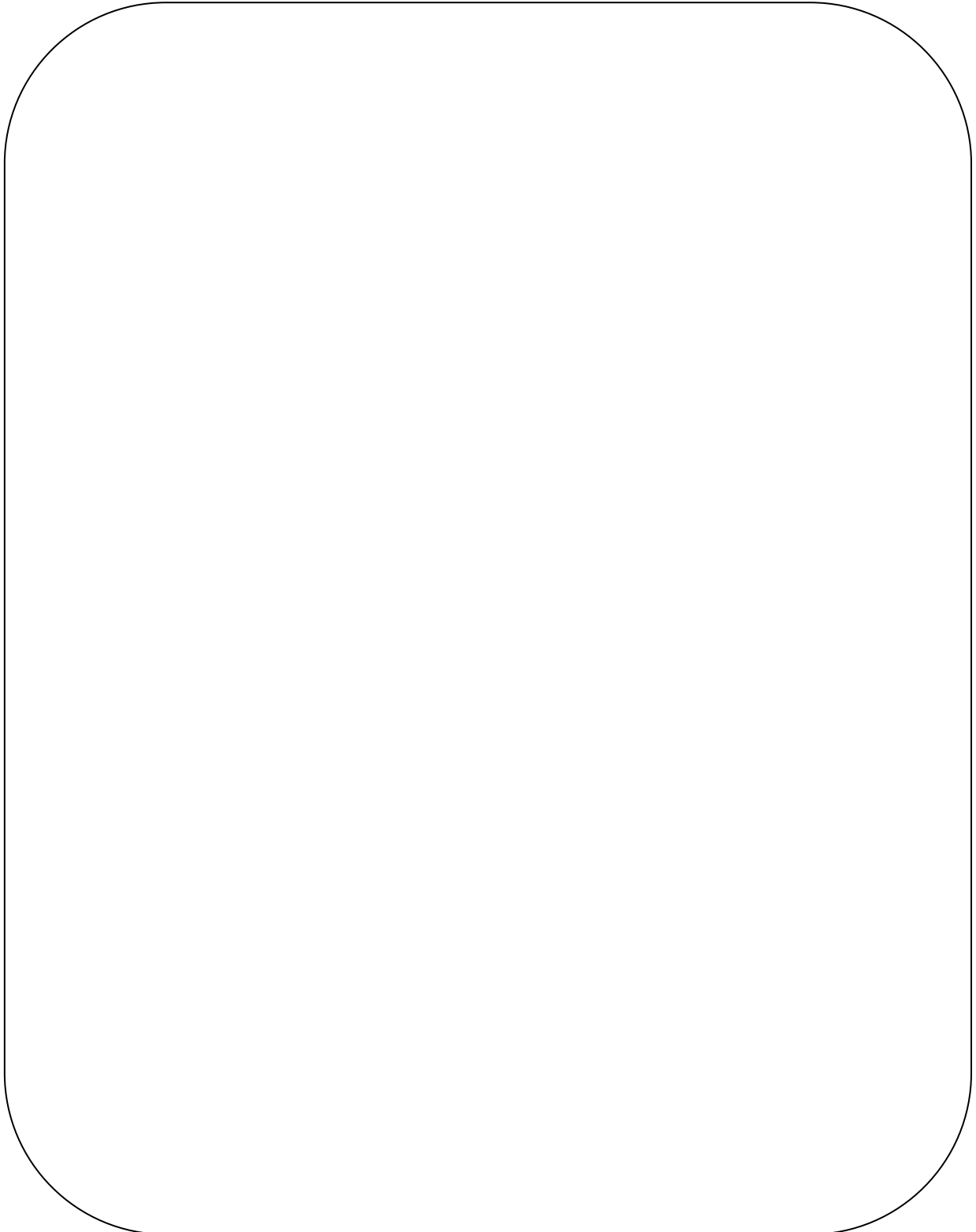
© Crown copyright 2013

Public Health England in association with the Welsh Government, the Scottish Government and the Food Standards Agency in Northern Ireland

## Resource sheet 2

Name \_\_\_\_\_

In the box below draw a meal including both a main course and pudding which are rich in calcium. Remember these foods are found in the blue section of the eatwell plate.





# Guides

## Boost Your Bones Badge

### Guidance notes for Leaders

See Background information for guidance, it is important that Guides understand both the dietary and exercise messages.

In order to get the Boost your Bones badge, Guides could do the following activities:

#### In Guides:

- Discuss Activity 1 as a group – ‘Eatwell Plate’
- Do Activity 2 as a group – ‘Getting enough Calcium’
- Discuss Activity 4 – ‘Which sports will build strong bones?’

#### At Home:

• Guides can do Activity 3 – ‘Counting your Calcium’  
AND one of the following:

- Guides can do Activity 5 – ‘Do a little Dance’

#### OR

- Guides can do Activity 6 – ‘Go Walking!’
- Guides can do Activity 7 – Skeleton Game

## Boost Your Bones Badge

### Guides 10-14 years

Focusing on the *Healthy lifestyle* area of the guide programme.

- Guides will learn the importance of a healthy balanced diet and what our bodies need to make our bones strong.
- They will learn how much calcium our bodies need and what foods are rich in calcium.
- Guides will learn about weight bearing exercise and that it is important to build strong bones NOW.

### Background Information to support activities

A healthy balanced diet provides our body and bones with the vitamins, minerals and energy needed to keep us healthy.

A healthy balanced diet includes foods from the 4 main food groups:

- Fruit and vegetables, include 5 portions daily.
- Carbohydrates foods like bread, potatoes, pasta and cereals. Try to eat something from this food group at each meal.
- Milk and other dairy products, try to include 2 or 3 servings each day.
- Protein foods like meat, fish, eggs, pulses, nuts and seeds. Try to include at least 2 servings from this group each day

The fifth food group includes those foods and drinks that are high in fat and/or sugar. These foods should be kept to treats, once or twice per week.

Bones are growing at their fastest rate from childhood to adolescence and during this time Guides should maximise their bone strength. Guides can “bank” their bone strength up to their mid to late twenties.

Essential ingredients to building strong bones are:

- calcium rich foods such as found in the milk and dairy foods food group
- exercise such as running, skipping, walking, dancing, team sports
- sunlight

Calcium gives strength and density to our bones and teeth. If we don't build strong bones our bones can become fragile when we are older causing osteoporosis. Our bones are more likely to break if we have osteoporosis.

- From the age of about 40 our bone strength weakens.
- Women suffer a greater loss of bone strength as they get older due to hormone levels.
- 1 in 2 women and 1 in 5 men will suffer a fracture mainly caused by Osteoporosis after the age of 50.

Children are recommended to do 60 minutes of exercise each day. Bone is a living tissue which reacts to weight bearing exercise by growing stronger. Weight bearing exercises are the best type of exercise to strengthen our

bones. Running, dancing, team sports and skipping are all good examples of weight bearing exercise

**Activity1: Eatwell Plate-getting the balance right**

Resources required: Paper, pens and picture of eatwell plate (copy at the end of the Guides section)

Ask the Guides to use the pens and paper provided to plan a menu for the weekend.

Show a picture of the eatwell plate.

Explain this plate shows all the different types of food that we should eat for a healthy diet. Explain a healthy diet gives us the energy our bodies need and helps keep our bodies and bones healthy.

Highlight that there are five types of foods or food groups on the plate. Explain the names and colours of the five food groups.

Explain the five foods groups on the plate are different sizes and this shows how much of what we eat should come from each food group. Those groups which make up the largest part of the plate should make up the largest part of what we eat. Those groups which make up the smallest part of the plate should make up the smallest part of what we eat.

**The eatwell plate**

Use the eatwell plate to help you get the balance right. It shows how much of what you eat should come from each food group.



Public Health England in association with the Welsh Government, the Scottish Government and the Food Standards Agency in Northern Ireland

© Crown Copyright 2013

*Suggested questions for discussion:*

What do you know about the *fruit and vegetables* (green) food group?

- These should make up a third of our diet.
- We should eat 5 portions of fruit and vegetables each day.
- Dried, frozen, fresh and juiced fruit and vegetables all count towards our 5 a day.
- One glass of fruit or vegetable juice counts as one portion of fruit or vegetables only once in the day.
- Fruit and vegetables help fill us up with fibre, vitamins and minerals.
- They can help prevent diseases like cancer and heart disease

What do you know about the *bread, rice, potatoes, pasta and other starchy carbohydrate foods* (yellow) food group?

- These should also make up a third of our diet
- A food from this group should be included at every meal as a source of energy.
- They help fill us up with fibre, vitamins and minerals.
- Brown rice and pasta, wholemeal and granary breads are higher in fibre and keep us feeling full for longer.

*Explain* the blue food group is the *milk and dairy foods* food group

Q. Which foods are included in the *milk and dairy foods* food group?

A. This group includes all varieties of milk, cheese and yoghurts.

*Explain* we should include foods from this food group each day to ensure our bodies get enough calcium.

Ask the Guides if they can identify which foods groups the food they have included in their menu belongs to.

## Activity 2: Getting enough Calcium and the taste test

Resources required:

- Copies of resource Sheet 3 and resource sheet 4
- Calcium fortified cereals and breads (see Resource Sheet 4 for some examples. Ensure products have calcium added by reading nutritional information on packaging).
- Soya yoghurt with added calcium
- Soya milk with added calcium
- Rice milk with added calcium milk
- Other milks such as oat or coconut milk
- Fruit such as strawberries, bananas
- Blender
- Plastic Cups
- Spoons

*Explain* that calcium is essential to build strong bones. The amount of calcium our body needs depends on our age. Our bones grow in strength until we are in our early to mid-twenties. It is therefore essential we eat lots of calcium rich foods when we are young to build bone for the future. Including two to three portions from the milk and dairy foods food group each day helps make sure we get enough calcium. If our bodies don't get enough calcium we are more likely to suffer from osteoporosis when we are older. Osteoporosis causes our bones to be weak and more likely to break.

*Provide* the Guides with Resource Sheet 3. Highlight that this sheet shows how much calcium we all need. *Ask* the Guides to use the table to identify how much calcium their bodies need each day (*Those who are 10 years old will need 550mg calcium and those who are 11 years and over will need 800mg calcium per day*).

*Suggested questions for discussion using Resource Sheet 3:*

Q. Which group of people need the largest amount of calcium each day?  
A. Breastfeeding woman require the most, needing 1200mg calcium each day

Q. Which group require the lowest amount of calcium each day?  
A. Children between the ages of 1-3 years require the least, needing 350mg calcium each day.

As discussed in Activity 1 milk and dairy foods such as cheese, yoghurt and milk are naturally rich in calcium. *Provide* resource sheet 4.

Q. What other dairy foods are rich in calcium?  
A. Rice pudding and custard.

*Explain* some foods don't naturally contain much calcium but manufacturers can add calcium to improve their nutritional content.

Resource Sheet 4 includes example of these foods such as baked beans, fortified cereals, white and calcium fortified breads

*Explain* people who suffer from conditions such as a cow's milk allergy or lactose intolerance need to follow special diets where they avoid milk and milk products. To make sure they get enough calcium they need to eat other calcium rich foods.

*Provide* a selection of milk alternatives such as soya, rice, oat and coconut milk. Pour a small amount in cups for guides to taste and discuss which they prefer. *Ask* the guides to look at the milk cartons and complete the table on Resource sheet 4 with the calcium content of 200ml of each milk. \*Guides may need some help with this, note one bone = 60mg calcium.

*Provide* Guides with some soya yoghurt to taste and again discuss what they think of the taste. *Ask* Guides to look at the yoghurt pots and complete the table with the calcium content of a soya yoghurt.

*Make* a small smoothie using one of the milk alternatives and some fruit in a blender.



### Activity 3: Home activity – ‘Counting your Calcium’

Ask Guides to complete Resource sheet 5 at home for one week. Ask them to record the calcium rich foods that they eat during the week and add up the total amount of calcium they eat each day. Guides may want to use *Resource Sheet 3&4* to help them complete this activity. They should calculate at the end of the week if they are getting enough calcium each day.



## Activity 4 Discussion

Which sports will build strong bones?

On a board or large piece of paper write out or cut out the following sports and ask the guides to place the sports around the hall in different groups of weight bearing and not weight bearing. Discuss whether they are weight bearing or not.

**Football**

**Swimming**

**Snooker**

**Cycling**

**Dance**

**Netball**

**Rounders**

**Skipping**

Football, netball, dance, rounders and skipping are all weight bearing.

Snooker is weight bearing because the player is walking around the table but this sport does not actively encourage impact on the body to promote bone strength.

Swimming helps to maintain strong muscles and is good for the heart but is not the best for exercising bones.

Cycling, again a great sport for keeping fit and healthy but because the bike is taking the weight of the body, this is not best for bone building.

High impact exercise is good for bone building. This includes running, jumping and dancing. Tennis is another high impact sport.

**Discuss with the Guides what they do each day to build strong healthy bones.**

### **Activity 5 – Do a little Dance!**

Make up your own dance moves (you can dance with a friend or group of friends if you prefer) to your favourite song.

If you feel confident, perform your dance routine to your guide friends



#### **Resources required:-**

Music  
Creativity

#### **Tips for a dance routine**

- Choose your favourite song
- Keep your dance routine simple
- Check out the 'Boogie for your Bones' guide at [www.bones4life.org](http://www.bones4life.org)
- Smile while you dance – you will cheer everyone up!

## Activity 6 – Take home activity ‘Go Walking!’

### Do one of the following:-

- Go for a brisk walk/ jog for 20 minutes three times per week (make sure you have an adult with you, it will help their bones too!)
- Try skipping for 5 minutes every day
- Do a sponsored walk for a favourite charity

### Remember the following ground rules for safe exercise

- Wear sensible, comfortable flat shoes or trainers and comfortable clothes
- Environment – make sure you have enough space to move and that the room temperature is not too hot or too cold.
- **Always warm up**

For good warm up exercises go to [www.nos.org.uk](http://www.nos.org.uk) click on healthy bones, go to Exercise and Osteoporosis pdf.

### Activity 7: Play the skeleton Game

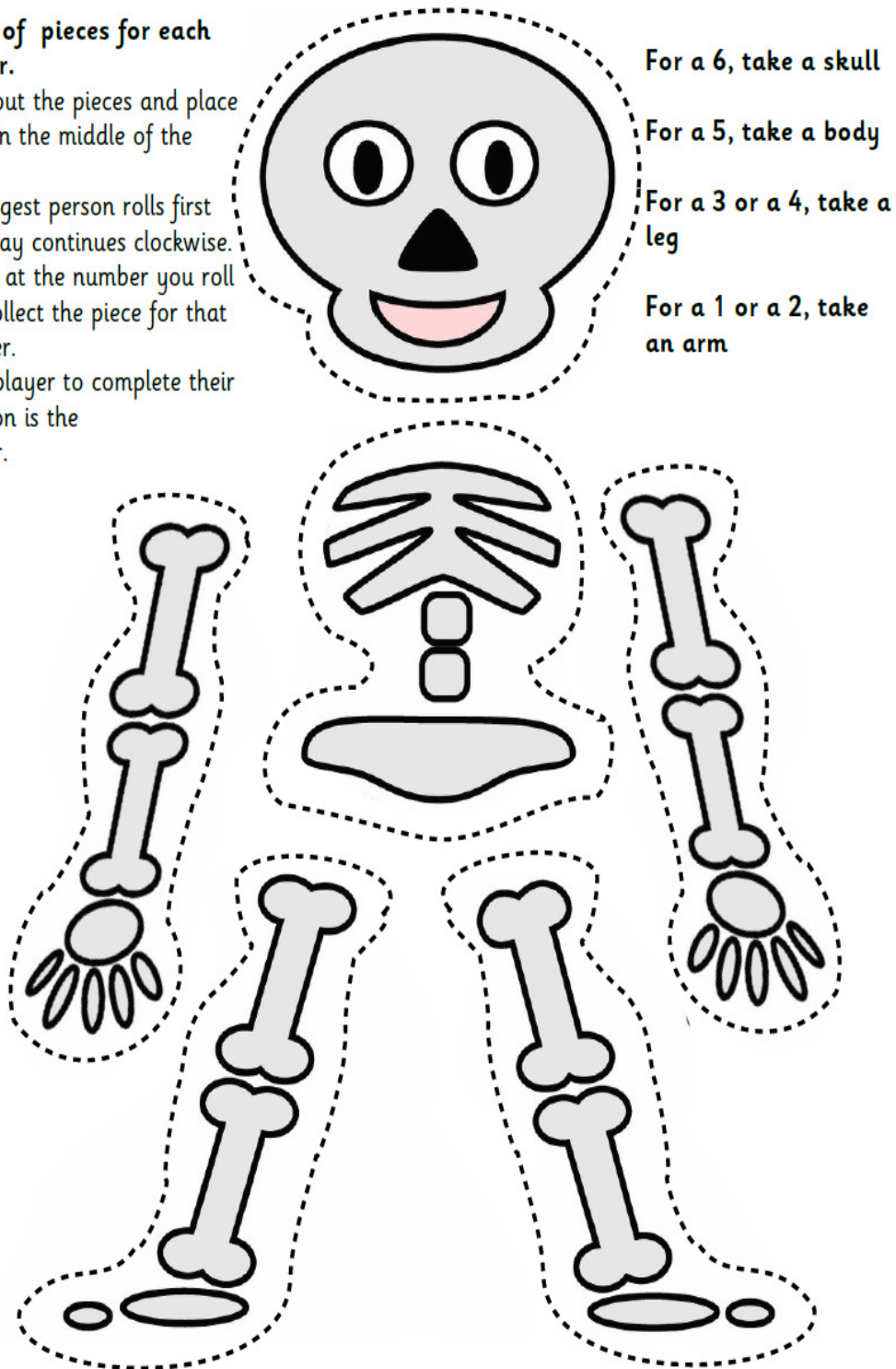
# Skeleton Game

**You will need:**

**A die**

**A set of pieces for each player.**

- Cut out the pieces and place them in the middle of the table.
- Youngest person rolls first and play continues clockwise.
- Look at the number you roll and collect the piece for that number.
- First player to complete their skeleton is the winner.






## Resource Sheet 3: Getting enough calcium

**How much calcium do you need each day?**

<b>Age</b>	<b>Calcium requirements</b>
Under 1	525mg (9 bones)
1-3 years	350mg (6 bones)
4-6 years	450mg (7½ bones)
7-10 years	550mg (9 bones)
11-18 years (girls)	800mg (13 bones)
11-18 years (boys)	1000mg (16 bones)
Adults (19+ years)	700mg (11 bones)
Breastfeeding woman	1250mg (20 bones)



### Resource Sheet 4: Calcium content of foods

Food	Calcium content
Milk, all types (200ml)	
Cheese (30g)	
Yoghurt (150g)	
Rice Pudding (200g)	
Custard (120ml)	
Calcium fortified cereal 1 serving (30g) e.g. <i>Cheerios, Oats and more, Frosties</i>	
Calcium fortified instant hot oat cereal 1 serving (30g) e.g. <i>Ready Brek®</i> or supermarket own brand	
Wholemeal bread 2 large slices	
White bread 2 large slices	
Calcium fortified bread 1 slice e.g. <i>Hovis best of both, Warburtons crusty white bread</i>	
Baked beans small tin (220g)	
Soya milk (200ml)	
Rice milk (200ml )	
Oat/Coconut (200ml)	
Soya yoghurt (125gpot)	

 = 60 mgs of calcium

### Resource sheet 5

Name \_\_\_\_\_

How many bones of calcium do you need each day? \_\_\_\_\_  
 (using Resource Sheet 3)

Record the foods that you eat during the day which contain calcium e.g. milk and dairy foods and foods with added calcium. Record their calcium content in bones using Resource Sheet 4 to help. At the end of each day total up the amount of calcium you have eaten to check if you are getting enough.

<b>Days of the week</b>	<b>Monday</b>	<b>Tuesday</b>	<b>Wednesday</b>	<b>Thursday</b>	<b>Friday</b>	<b>Saturday</b>	<b>Sunday</b>
<b>Food eaten</b> <i>No. of Bones</i>							
<b>Food eaten</b> <i>No. of Bones</i>							
<b>Food eaten</b> <i>No. of Bones</i>							
<b>Food eaten</b> <i>No. of Bones</i>							
<b>Food eaten</b> <i>No. of bones</i>							
<b>Total no of bones</b>							

# The eatwell plate

Use the eatwell plate to help you get the balance right. It shows how much of what you eat should come from each food group.



© Crown copyright 2013



## Boost Your Bones Badge

### Guidance notes for Leaders

See Background information for guidance, it is important that Seniors understand both the dietary and exercise messages.

In order to get the Boost your Bones badge, Seniors could do **4** of the following activities, (activities 2 and 4 must be completed, choose either activity 1 or 3 and either activity 5 or 6):

- Do Activity 2 – ‘Getting enough calcium’
- Do Activity 4 – ‘Which sports build strong bones?’ as a group

EITHER

- Do Activity 1 – ‘Health Promotion talk’ with the Brownies (see Brownie section for Activities 1 & 2)

OR

- Do Activity 3 – ‘Health Promotion poster’ in Seniors or at home

EITHER

- Do Activity 5 – ‘Do a little dance!’

OR

- Do Activity 6 – ‘Go Walking!’

## Boost Your Bones Badge

### **Seniors 14-25years**

- Seniors will learn the importance of a healthy balanced diet and what our bodies need to make our bones strong.
- They will learn how much calcium our bodies need and what foods are rich in calcium.
- They will learn how to make sure our bodies get enough vitamin D.
- Seniors will learn about weight bearing exercise and that it is important to build strong bones NOW to prevent osteoporosis.

### **Background Information to support activities**

A healthy balanced diet provides our body and bones with the vitamins, minerals and energy needed to keep us healthy.

A healthy balanced diet includes foods from the 4 main food groups:

- Fruit and vegetable, include 5 portions daily.
- Carbohydrates foods like bread, potatoes, pasta and cereals. Try to eat something from this food group at each meal.
- Milk and other dairy products, try to include 2 or 3 servings each day.
- Protein foods like meat, fish, eggs, pulses, nuts and seeds. Try to include at least 2 servings from this group each day

The fifth food group includes those foods and drinks that are high in fat and/or sugar. These foods should be kept to treats.

Essential ingredients to building strong bones are:

- calcium rich foods such as found in the milk and dairy foods food group
- exercise such as running, skipping, walking, dancing, team sports
- sunlight

Bones are growing at their fastest rate from childhood to adolescence and during this time Seniors should maximise their bone strength. Seniors can “bank” their bone strength up to their mid-to late twenties. Calcium gives strength and density to our bones and teeth. If we don’t build strong bones our bones can become fragile when we are older causing osteoporosis (the fragile bone disease).

Our bones are more likely to break or fracture if we have osteoporosis.

- From the age of about 40 our bone strength weakens.
- Women suffer a greater loss of bone strength as they get older due to hormone levels.
- 1 in 2 women and 1 in 5 men will suffer a fracture mainly caused by Osteoporosis after the age of 50

The CMO (Chief Medical Officer) recommends that children should do 60 minutes of exercise each day. Bone is a living tissue which reacts to weight bearing exercise by growing stronger. Weight bearing exercises are the best type of exercise to strengthen our bones. Running, dancing, team sports and skipping are all good examples of weight bearing exercise

Our bones also need sunlight to make them strong. By enjoying some time outside during the months of April to Mid-October this helps to build strong bones.

### **Activity 1: Health promotion talk**

Using the Brownies resource pack for 'Boost your Bones', seniors should deliver activity 1 or 2 of the pack to brownies.

Ensure that Seniors are confident with the information included in the session and discuss their plan for the session before delivering it.

Following the session discuss with the Seniors what they feel went well and also what they feel they could improve if they were to repeat the session again.



## Activity 2: Getting enough Calcium

Resources required:

- Copies of Resource Sheet 6
- Copies of Resource Sheet 7
- Copies of Resource Sheet 8 for home

*Explain* that calcium is essential to build strong bone. The amount of calcium our body needs is dependent on our age. Our bones grow in strength until we are in our mid to late twenties and it is essential we eat lots of calcium rich foods when we are young to “bank” bone for the future. Including two to three portions from the milk and dairy foods food group a day helps make sure we get enough calcium. If our bodies don’t get enough calcium we are more likely to suffer from osteoporosis when we are older. Osteoporosis causes our bones to be weak and then they are more likely to break.

*Provide* the Seniors with Resource Sheet 6. Highlight that this sheet shows how much calcium we all need. *Ask* the Seniors to use the table to identify how much calcium their bodies need each day (*Those who are 11 years to and over will need 800mg calcium per day and those over 18 years require 700mg*).

Provide the Seniors with Resource Sheet 7, *highlight* it can be seen that *Milk and dairy foods such as cheese, yoghurt, and milk puddings* are a good source of calcium. *Explain* some foods don’t naturally contain much calcium but manufacturers can add calcium to improve their nutritional content. The table includes examples of these foods such as baked beans, white and calcium fortified breads and cereals.

*Explain* people who suffer from conditions such as cow’s milk allergy and lactose intolerance need to follow special diets where they avoid milk and milk products. To make sure they get enough calcium they need to eat other calcium rich foods. These foods can include milk alternatives such as soya, oat and rice milk and soya cheeses or yoghurts.

*Ask* the Seniors to complete Resource sheet 8 at home for one week. Ask them to record the foods that they eat during the week which contain calcium e.g. milk and dairy foods and foods with added calcium. Ask Seniors at the end of the week total up the amount of calcium you have eaten to check if you are getting enough calcium each day.

### Activity 3: Health promotion poster

*Explain* our bones need calcium rich foods but they also need Vitamin D to make the most of this calcium. Vitamin D is sometimes called the sunshine vitamin.

*Ask* the Seniors to prepare a health promotion poster to highlight the importance of vitamin D to promote healthy strong bones. It may be useful to include some of the following points in the poster:

- About 90% of our vitamin D comes from the sunlight. Our bodies then use this sunlight to make vitamin D in our skin.
- The best time of the year to get this sunlight is from April to mid October.
- Adults are recommended to expose their skin (without sun cream) to the sun for about 10 minutes once or twice per day between April and September. They should take care not to get burnt.
- There aren't currently similar recommendations for children. By children regularly enjoying some time outside during the summer months this can help ensure they get enough Vitamin D. They should also take care not to burn.
- There are a few foods that are rich in Vitamin D, these include margarines, eggs, oily fish (e.g. herring or sardines), cod liver oil and fortified breakfast cereals.
- It is recommended that children between the ages of 6 months and 5 years of age take vitamin drops to get enough vitamin D and pregnant and breastfeeding woman take a supplement.
- There are a number of groups at risk of not getting enough Vitamin D. These groups include babies, young children, pregnant and breastfeeding woman, older people, those with darker skin or those who cover up their skin or spend little time outdoors.

### Activity 4 Discussion

Which sports will build strong bones?

On a board or large piece of paper write out or cut out the following sports and ask the guides to place the sports around the hall in different groups of weight bearing and not weight bearing. Discuss whether they are weight bearing or not.

**Football**

**Swimming**

**Snooker**

**Cycling**

**Dance**

**Netball**

**Rounders**

**Skipping**

Football, netball, dance, camogie and skipping are all weight bearing.

Snooker is weight bearing because the player is walking around the table but this sport does not actively encourage impact on the body to promote bone strength.

Swimming helps to maintain strong muscles and is good for the heart but is not the best for exercising bones.

Cycling, again a great sport for keeping fit and healthy but because the bike is taking the weight of the body, this is not best for bone building.

High impact exercise is good for bone building. This includes running, jumping and dancing. Tennis is another high impact sport.

**Discuss with seniors what they do each day to build strong healthy bones.**

### **Activity 5 – Do a little Dance!**

Make up your own dance moves (you can dance with a friend or group of friends if you prefer) to your favourite song.

Or

If possible invite a Zumba/Salsa teacher in to show you the right moves



#### **Resources required:-**

Music  
Creativity

#### **Tips for a dance routine**

- Choose your favourite song
- Keep your dance routine simple
- Check out the 'Boogie for your Bones' guide at [www.bones4life.org](http://www.bones4life.org)
- Smile while you dance – you will cheer everyone up!

## **Activity 6 – Take home activity ‘Go Walking!’**

Do one of the following:-

- Go for a brisk walk/ jog for 20 minutes three times per week (make sure you have an adult with you, it will help their bones too!)
- Try skipping for 5 minutes every day
- Do a sponsored walk for a favourite charity

### **Remember the following ground rules for safe exercise**

- Wear sensible, comfortable flat shoes or trainers and comfortable clothes
- Environment – make sure you have enough space to move and that the room temperature is not too hot or too cold.
- **Always warm up**

For good warm up exercises go to [www.nos.org.uk](http://www.nos.org.uk) click on healthy bones, go to Exercise and Osteoporosis pdf.

## Resource Sheet 6 - Getting enough calcium

How much calcium do you need each day?

<b>Age</b>	<b>Calcium requirements</b>
Under 1	525mg (9 bones)
1-3 years	350mg (6 bones)
4-6 years	450mg (7½ bones)
7-10 years	550mg (9 bones)
11-18 years (girls)	800mg (13 bones)
11-18 years (boys)	1000mg (16 bones)
Adults (19 +years)	700mg (11 bones)
Breastfeeding woman	1250mg (20 bones)



### Resource Sheet 7: Calcium content of foods

Food	Calcium content
Milk, all types (200ml)	
Cheese (30g)	
Yoghurt (150g)	
Rice Pudding (200g)	
Custard (120ml)	
Calcium fortified cereal 1 serving (30g) e.g. <i>Cheerios, Oats and more, Frosties</i>	
Calcium fortified instant hot oat cereal 1 serving (30g) e.g. <i>Ready Brek®</i> or supermarket own brand	
Wholemeal bread 2 large slices	
White bread 2 large slices	
Calcium fortified bread 1 slice e.g. <i>Hovis best of both, Warburtons crusty white bread</i>	
Baked beans small tin (220g)	
Soya milk (200ml)	
Rice milk (200ml )	
Oat/Coconut (200ml)	
Soya yoghurt (125gpot)	





= 60 mgs of calcium



### Resource sheet 8

Name \_\_\_\_\_

How many bones of calcium do you need each day? \_\_\_\_\_  
(using Resource Sheet 6)

Record the foods that you eat during the day which contain calcium e.g. milk and dairy foods and foods with added calcium. Record their calcium content using Resource Sheet 7 to help. At the end of each day total up the amount of calcium you have eaten to check if you are getting enough.

<b>Days of the week</b>	<b>Monday</b>	<b>Tuesday</b>	<b>Wednesday</b>	<b>Thursday</b>	<b>Friday</b>	<b>Saturday</b>	<b>Sunday</b>
<b>Food eaten</b> <i>No. of Bones</i>							
<b>Food eaten</b> <i>No. of Bones</i>							
<b>Food eaten</b> <i>No. of Bones</i>							
<b>Food eaten</b> <i>No. of Bones</i>							
<b>Food eaten</b> <i>No. of bones</i>							
<b>Total no of bones</b>							

Boost Your Bones Challenge Badge Order Form

Badges can be purchased via our County Badge Website  
[www.girlguidingnorthantrim.weebly.com](http://www.girlguidingnorthantrim.weebly.com) or by cheque/post using the form  
 below.

Name	
Unit	
Postage Address	
No. of Badges required (£1 each)	
Postage	£1 per order
Total	£

Cheques payable to **Girlguiding North Antrim**

Please post orders to:  
 Miriam McIlvenna  
 28 Fendale Park  
 Cullybackey  
 Ballymena  
 Co. Antrim  
 BT43 5PU  
 N. Ireland

Many thanks for your support & we hope you enjoy the challenge!

Any queries please email [girlguidingnorthantrim@gmail.com](mailto:girlguidingnorthantrim@gmail.com)