



BEST BONES FOR LIFE

Lesson Ideas

These curriculum-linked lesson ideas and activity sheets offer a range of learning experiences for primary and middle years students on the topic of bones.

Broad Learning Outcomes

Using this curriculum material will assist students in achieving the following broad learning outcomes:

- Students will learn about bones and their role in our body.
- Students will discover the benefits of calcium, vitamin D and exercise in building strong bones.
- Students will explore life style choices which contribute to bone health.

English

- Students to read the information in 'Facts for Students' (in the 'Themed Curriculum Support Resources' section of the FTfs website) then answer the questions on the '**Best Bones Quiz**' activity sheet.
- Students to organise a 'Best Bones' day or week at their school. They should write to the principal to ask permission and outline what they would like to do and achieve during the day/week.
- Students to pretend they are the bones in their own body and write a letter to themselves explaining how the bones feel about the way they are being treated and looked after.
- As a class compile a 'Best Bones' recipe book including students' favourite high-calcium recipes. This book could be sold as a school or class fundraiser.

History

- The number of people with osteoporosis is escalating faster now than at any other time in recorded history. Students to hypothesise why people from previous generations may have been less likely to develop osteoporosis. (Hint: consider diet, lifestyle/exercise, vitamin D exposure and life expectancy.)
- Students to investigate how the shape and size of the human skeleton has changed throughout the ages.



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Mathematics

- Students to test the theory that the length of the femur (thigh) bone is one quarter the total height of the body. Collect data from multiple classmates and present findings and a conclusion in a table.
- Students to measure the length of their own bones (thigh, shin, spine, arm etc) and use strips of paper to create an accurate model of their skeleton.
- Students to collect data on the number of dairy foods that classmates bring to school and graph their findings for each day. At the end of one week calculate if the class is having an average of three serves of dairy each day. If not, discuss how students' may be able to incorporate more dairy into their diet.
- Students to find out what the golden ratio (sometimes know as the Divine Proportion) is and how it is reflected in the human body.

Science/Technology

- Bones are living things. Students to discuss/research the observable properties that make something a living thing. Which of these properties apply to our bones?
- Students to research calcium. What is its chemical symbol? Why is it essential for all living organisms to have calcium? Where can calcium be found in the natural environment? What are some uses for calcium?
- Students to create a cross-section model of a bone. They could use red pipe cleaners for the periosteum, a toilet roll for cortical, chicken wire or mesh for the cancellous and cellophane for the bone marrow. Students to label each section and explain what it does.
- Students to research osteoporosis. What is it and what can they do to prevent it?
- Students to conduct tests on a chosen dairy product. For example select three different brands of yogurt and compare price, taste, texture, nutritional information etc.

The Arts

- Students to develop an advertising campaign to encourage adults or children to consume more calcium.
- Students to learn the song '*Dem Bones*' (sometimes called the Bone Song) which has been used for many years to teach children about bones. Students may wish to devise a dance to accompany the song and perform it at an assembly or teach it to younger students.



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Health and Physical Education

- Students to research to find out how much calcium is needed each day by people of different ages.
- Students to research which foods are high in calcium. Record:
 - The name of the food
 - The recommended serving size
 - The amount of calcium contained in one serve
 - The percentage of the daily recommended serve of calcium in the product.
- Students to use the '**Food Diary**' activity sheet to record their food intake for five days. Review the completed sheet to assess if calcium intake is adequate.
- Students to create a seven day menu plan (including breakfast, lunch, dinner and snacks) that includes the recommended daily amount of calcium for a person of their age.
- Students to test their knowledge of bones by completing the '**Sammy Skeleton**' activity sheet.
- Students to devise a daily exercise routine to help in building better bones. The routine should include weight bearing and resistance exercises.

LOTE/Languages

- Students to find out how to write or say the names of some bones in various languages.
- Students to research which countries are famous for dairy products. For example The Netherlands and France are famous for their cheeses.