

Age and Ageing

Years 8/9/10

3-4 weeks

This unit explores issues around ageing. Pupils use this context to learn about organisms and health. The focus is on describing how our bodies change with age and possible explanations for these changes. Changing with age is presented as a normal part of life, however choices that pupils make will influence how they age. We are living longer than previous generations, presenting challenges that need solutions which science has a role in providing. There are a number of opportunities in this unit to develop skills in Using ICT and to assess Communication.

Key Questions

[How do we change as we age?](#)

[Why do we age?](#)

[How long will you live?](#)

[What diseases are associated with ageing?](#)

[How can life be made easier for older people?](#)

Developing pupils' Knowledge, Understanding and Skills	Possible links with other areas of learning/subject strands
<p>Develop creative and critical thinking in their approach to solving scientific problems;</p> <p>Research scientific information from a range of sources</p> <p>Learn about: Organisms and Health " Cells, genes and reproduction " Healthy body and mind</p>	<p>Art & Design Arranging photographic evidence of how pupils have changed from birth to the present.</p> <p>Technology & Design Design and make a talk to make a task easier for an older person.</p> <p>Financial Capability Living longer means making financial plans for retirement (pensions).</p>
Possible development of Thinking Skills and Personal Capabilities	
<p>The main focus in this unit is on developing skills in Managing Information.</p> <ul style="list-style-type: none"> ○ Asking focused questions to find out relevant information. ○ Locating information for a particular purpose. ○ Examining accuracy and reliability of information. ○ Summarising findings. ○ Communicating information appropriately. <p>There are also opportunities to develop the other Thinking Skills and Personal Capabilities.</p>	

Why do we age?	
Learning Intentions Pupils are learning...	Possible Learning, Teaching and Assessment Activities
<p>... about how scientific theories are used as explanations.</p> <p>... to summarise their findings. Managing Information.</p>	<p><u>Discussion</u> Is growing older necessarily a bad thing? What are the advantages? What skills/capacities may improve with age? How can the disadvantages be reduced?</p> <p>Teacher introduces some of the scientific theories about ageing:</p> <ul style="list-style-type: none"> • Cells programmed to divide a certain amount of times / Cells lose their ability to divide. • DNA damage due to, for example, UV light. • Cell damage due to free radicals/oxygen radicals. <p>Pupils read BBC article on 'Getting Older' http://www.bbc.co.uk/health/health_over_50/gettingolder_age.shtml</p> <p>This articles gives a number of possible explanations for why we age. Each pupils reads the article individually. In groups, they discuss the article and pick out the facts. Each pupil chooses a fact and prepares a summary of it in their own words.</p> <p>Pupils take part in a Revolving Circle* activity to share their fact with other members of the class. They fall back into their groups and write a summary about what they now know about ageing and getting older. They may use a variety of formats for this summary, for example, a written paragraph, a mind map, a consequence wheel*, etc. Alternatively, they could design a poster on the factors which affect ageing.</p> <p>Teacher manages debriefing afterwards – What did pupils find out that was surprising or new to them? The following website: http://www.sciencemuseum.org.uk/on-line/lifecycle/26.asp may support the discussion. Opportunity to develop/assess Communication</p>

*See Active Learning and Teaching Methods for Key Stage 3

Learning Intentions Pupils are learning...	Possible Learning, Teaching and Assessment Activities
<p>...to examine the accuracy and reliability of information.</p> <p>Managing Information</p>	<p>Teacher decides with class if there is any aspect of this key question that they wish to explore further. Background information contained on Resource Sheet 1 may be useful to prompt discussion. It may be useful to invite in an external speaker.</p> <p>Review the original discussion questions at the start of this Key Question. Are the answers still the same?</p> <p><u>Anti-Ageing products.</u></p> <p>Choose a product that claims to slow down or reduce the effects of ageing.</p> <p>What kind of images are used in the advertising?</p> <p>What is/are the active ingredient(s)?</p> <p>Read the small print to find out how the product works. How reliable is the information?</p> <p>Does it have a scientific basis? If based on research findings, which organisation carried out the research? Who funded the research?</p> <p>What are pupils' conclusions about anti-ageing products having looked more closely at them?</p> <p>Useful web resources:</p> <p>http://www.bbc.co.uk/sn/tvradio/programmes/horizon/broadband/tx/beautyparlour/spotthecatch/</p> <p>http://news.bbc.co.uk/1/hi/magazine/6498421.stm</p>

How long will you live?	
Learning Intentions Pupils are learning...	Possible Learning, Teaching and Assessment Activities
<p>... to describe what they know about ageing.</p> <p>...to use a news article to prompt discussion.</p> <p>... to link cause and effects.</p>	<p>Pupils could take part in a Carousel* activity to capture their initial thoughts on the following questions:</p> <ol style="list-style-type: none"> 1. Can you predict how long you will live? 2. What factors could affect your life expectancy? 3. How has life expectancy changed over the last 100 years? What do you think are the reasons for this? 4. Does life expectancy depend on where you live? Why? <p>Teacher manages debriefing after this activity to introduce the different factors which contribute to our increasing life expectancy.</p> <p>Useful articles to stimulate discussion on increasing life expectancies: http://news.bbc.co.uk/1/hi/health/1977733.stm http://www.bbc.co.uk/dna/h2q2/A3784854</p> <p>Compare life expectancies in other countries and try to explain the differences (Developing Global Awareness). (Information for some countries on resource sheet 2 at end of unit).</p>

*See Active Learning and Teaching Methods for Key Stage 3

What diseases are associated with ageing?

Learning Intentions Pupils are learning...	Possible Learning, Teaching and Assessment Activities
<p>... about how the body can deteriorate with age.</p> <p>... to compare disease state with a healthy body.</p>	<p>Pupils brainstorm diseases associated with ageing. These are recorded on the board, along with a brief description of the symptoms of the disease.</p> <p>Pupils investigate one of these diseases more fully, either through a Case Study or through an Information Corners activity.</p> <p><u>Case Study</u> Pupils do a case study on an age related disease, either someone they know or have read about in a magazine/newspaper/web-based article. Success criteria are discussed and decided by the teacher and class before hand.</p> <p>OR <u>Information Corners</u> Teacher preparation required in advance! A number of information corners prepared by teacher containing a range of information on a particular age-related diseases. These may be books from the library, articles downloaded from the Internet, newspaper and magazine articles, resource material from different agencies such as Age Concern and the Local Health Trust, etc.</p> <p>In groups, pupils decide which disease each of them is going to become an expert in. Pupils then go to their expert groups at each information corner to research one of these diseases more fully. Pupils become 'experts' in the disease that they are researching. Pupils reform into original groups, where each member of the group is an 'expert' in a different disease. They each take 5 minutes to describe the disease they have researched and take questions on it from the rest of the group.</p> <p><u>Opportunity to develop/assess Communication</u></p> <p><u>Class discussion</u> Do the class have any unanswered questions? These are recorded on the board. For each question:</p> <ul style="list-style-type: none"> • Does anyone in the class have an answer/comment? • Where could information be found to answer the question?

How can life be made easier for older people?

Learning Intentions Pupils are learning...	Possible Learning, Teaching and Assessment Activities
<p>... about their role and society's role in supporting older people.</p>	<p>Pupils consider how life could be made easier for older people. The following web-links may stimulate ideas: http://news.bbc.co.uk/1/hi/uk/4079345.stm http://news.bbc.co.uk/1/hi/magazine/6277944.stm</p> <p><u>Link to Technology & Design</u> Design and make a device to make a task easier for older people.</p> <p><u>Link to Employability</u> What careers support older people? Why will more people be needed to support older people in the future? Useful websites: http://www.ageconcern.co.uk http://www.helptheaged.org.uk/en-gb</p> <p><u>Conclusion</u> What issues have been raised for the class through studying this unit? Class choose one of these issues and decide what action(s) they will take in response to it. Useful resource for activities across generations: www.centreforip.org.uk</p>

Some Key Facts

Average life expectancy of women in Northern Ireland – 80.6

Men - 75.8

Average life expectancy of Travellers in Northern Ireland – 45

(why the differences?)

By 2040 the proportion of people over 60 in NI will double. There will be a 57% increase in those aged over 75. (67% of men and 60% women aged 65-70 have a long standing illness)

59% of women pensioners have an income below what is required to secure a basic, minimum standard of living.

At 31 August 2005 2,257 people in NI were waiting on hip or knee replacement surgery. At 30 June 2006 1,920 people were waiting for cataract surgery.

Demographic trends suggest that by 2036 between 1% of women and 2% of men aged between 65-69 will have dementia and this will increase to 25% of women and 18% of men between the ages of 85-89.

UK government spending on research: £300 per person on cancer, £11 per person on dementia

Between Sept and Nov 2006, 63.4% of people aged between 50 and the State Pension Age (SPA) - 65 for men and 60 for women - were economically active

The total number over SPA in employment during the same period was 26,000

17,302 people over 60 were enrolled in vocational and non-vocational courses in Further Education in 2005-2006

Older people are more likely to live in older houses (pre 1945) which are less likely to be energy efficient.

Resource Sheet 1

Background Information/Discussion Prompts for Teachers

69% of single pensioners and 22% of couples do not have access to a private car. 48% of households without a car in NI are pensioner households.

67% of the male population aged over 70 hold a full driving licence compared to 26% of females in the same age group.

The insurance industry does not provide insurance to car hirers over the age of 70.

Life Expectancy

The following tables show how long children born between 2000 and 2005 can expect to live for in different countries around the world

Country	Average Life Expectancy
Afghanistan	43
Angola	40
Argentina	74
Bangladesh	61
Belgium	79
Brazil	68
Canada	79
China	71
Croatia	74
Ethiopia	46
France	79
Gambia	54
Germany	78
Greece	78
Guatemala	66

Country	Average Life Expectancy	Country	Average Life Expectancy
India	64	Pakistan	61
Indonesia	67	Philippines	70
Iraq	61	Poland	74
Ireland	77	Romania	71
Italy	79	Russian Federation	67
Jamaica	76	Rwanda	39
Japan	82	South Africa	49
Kenya	45	Spain	79
Kuwait	77	Sudan	56
Latvia	71	Sweden	80
Lebanon	74	Turkey	70
Maldives	67	United Kingdom	78
Mexico	73	United States	77
Morocco	69	Viet Nam	69
New Zealand	78		

Development of Learning Outcomes

- research and manage information effectively
- show deeper scientific understanding by thinking critically and flexibly
- work effectively with others;
- demonstrate self management by working systematically, persisting with tasks, evaluating and improving own performance
- communicate effectively in oral formats, showing clear awareness of audience and purpose

Links with Key Elements

Personal Understanding
Developing an awareness of changes with age.

Personal Health
Making healthy choices.

Media Awareness
News and magazine articles on ageing.

Links with Learning for Life and Work

Personal Development
Key Concept – Personal Health
Develop understanding about, and strategies to manage, the effects of change on body, mind and behaviour.

Local & Global Citizenship
Key Concept – Democracy and Active Participation
Investigate an issue from a range of viewpoints and suggest action that might be taken to improve or resolve the situation.