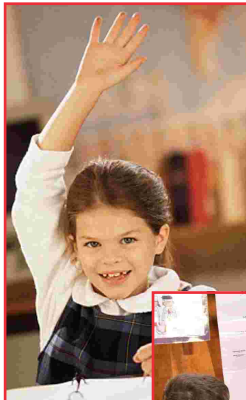


# Medics

## in Primary Schools

A Queen's - Sentinus Programme



Student Teaching & Learning Guide

# Contents

	<b>Page</b>
<b>Background</b>	<b>3</b>
<b>A Note to Principals and Teachers</b>	<b>5</b>
<b>Introduction to Teaching &amp; Learning Guide</b>	<b>7</b>
<b>Unit 1 – Healthy Skin</b>	<b>9</b>
<b>Unit 2 – Healthy Heart &amp; Lungs</b>	<b>13</b>
<b>Unit 3 – Healthy Brain</b>	<b>17</b>
<b>Unit 4 – Healthy Living</b>	<b>23</b>
<b>Appendices</b>	
<b>Appendix 1 – Activity Sheet S1 – Magnification</b>	
<b>Appendix 2 – Activity Sheet S2 – Saving My Skin</b>	
<b>Appendix 3 – Activity Sheet H1 – Pulse Rate</b>	
<b>Appendix 4 – Activity Sheet H2 – Blood, Glorious Blood</b>	
<b>Appendix 5 – Activity Sheet B1 – Rules for a Healthy Mind</b>	
<b>Appendix 6 – Activity Sheet L1 – Cooling Down</b>	
<b>Appendix 7 – Activity Sheet L2 – What is Food For?</b>	
<b>Appendix 8 – Assessment</b>	



# Medics in Primary Schools

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## Background

The Medics in Primary Schools (MIPS) programme provides an opportunity for primary school children and medical students to develop their communication skills. The programme, which has been operating now since 2000, has involved 50 primary schools, nearly 400 medical students at Queen's University Belfast, and over 10,000 primary pupils in the greater Belfast area. The project is offered as a Student Selected Component within the medical students' second year course. Students have a placement one afternoon a week for ten weeks in the spring term in a primary school, during which they deliver a short science and health education programme to P6 or P7 pupils, and develop their own communication skills in working with young people.

**The MIPS Programme:** The programme was developed by local writers, with the support of the Education and Library Boards, and reflects the Key Stage 2 programme of the Northern Ireland Curriculum. Students are provided with teaching material, each unit comprising a three or four week outline course that can be presented as a whole, or amended to suit their expertise or the needs of the school. Emphasis is very much on practical and investigative aspects of each theme. Teachers are encouraged to be proactive in their help and support of the student. In fact the project works only because teachers like it, understand it, and become involved. Feedback from teachers is actively encouraged, and students are also encouraged to ask for comment on their work, and their developing pedagogic skills.

**The Medical Students:** Every second year medical student at Queen's University is offered a Student Selected Component, covering two afternoons a week during their second semester (February – May). Students who choose MIPS are given training in working with upper primary pupils and deliver a four unit health education programme in their link school. They also receive a guidance booklet detailing the units they may wish to teach, and ways are suggested in which the programme might be delivered. They have a log book to record reflections on their experiences. Finally, they are assessed on their developing pedagogic skills during the programme, and have an opportunity to reflect on their experience.

**The Pupils:** As the programme operates during afternoon sessions, schools must be within easy travelling distance of south Belfast. Over forty primary schools in the Belfast area enthusiastically engage in the programme each year. Pupils look forward to the "young doctor" visiting each week and working with them. The response of pupils is very positive.

**The Teachers:** During the autumn, the programme coordinator visits principals of potential schools outlining the advantage to the school of participation, together with the schools' responsibilities. Teachers from participating schools also receive course materials. They are encouraged to develop their mentoring skills with young people who do not intend to become teachers, but do wish to develop their communication skills.



# A Note to Principals and Teachers

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At the end of the 2008 – 2009 cycle the consensus view seemed to be that due to funding limitations Medics in Primary Schools was terminating. However in mid summer further funding was identified and Queen's University and Sentinus are working in partnership to enable the **Medics in Primary Schools** initiative to run again in 2010. Sixty medical students will be taking part.

Forty six schools in the Greater Belfast Area are taking part in the project in 2010. Many of the schools have taken part before, some as many as nine times. To schools new to the project and to those schools returning again I would also like to say welcome, and thank you for your willing co-operation. Your ability to make a medical student feel comfortable, and benefit hugely from the experience, is much appreciated by all involved in the organisation and management of the programme.

I would like to make a few points arising out of the experience of the last nine years.

This programme only works if the teacher and student are working together. We are not trying to produce new teachers and these students do not have the skills that even student teachers might have. The student has to co-operate with, and have the co-operation of, the teacher with whom he or she is working, otherwise the project does not work. Feed back, positive and negative, from the teacher, one mechanism by which we all learn, is much appreciated by all students.

I suggest a slight change in the format of the first visit, ***the observation visit***. This is intended to be an opportunity to see a skilled professional at work. For most students their last experience in a classroom may have been sitting at a desk, so watching how a teacher works, while not a pupil, is a whole new experience. However, it would be useful for the student to be in front of the pupils for 10 – 20 minutes at the end of this first session. This could be structured in such a way that the pupils ask a series of questions, which interest them and enable them to find out more about the student. The pupils may have discussed and formulated questions beforehand. The student will feel much more confident as he/she will be talking about things with which he/she is familiar.

The ***assessment process*** is built into the programme and to be successful we need the co-operation of the teacher. This format has been introduced as a result of student feedback; students have stated that they would welcome some ***feedback/evaluation*** of their teaching. The format, introduced three years ago, is derived from the list of competences for Beginning Teachers, but much modified. In order to give the teacher/mentor as little extra work as possible the form has a series of tick boxes and there is a space for the teacher to add a professional comment at the end. The assessment form and instructions for use will be distributed to each school during the project.

Each student is equipped with a ***log book*** to record experiences. In previous years we have found that some students either use the log book intermittently or not at all. In order to encourage them to make full use of the log book we are asking the teacher/mentor to sign off each unit as it is completed.

A ***Student should never be left on his or her own in charge of a class***. I must emphasise this – if an accident were to occur with only an unqualified person in charge the school would have difficulty in refuting charges of abdication of responsibility.

Finally, may I once again emphasise to principals and teachers that, in the event that the student is not performing in the way the school would expect, I should be contacted. I promise action will be taken to remedy the situation.

My contact details are: **Colin Press Tel: 028 9084 9389**      **Mobile: 07788 14 6969**  
**Email: [press.colin@btinternet.com](mailto:press.colin@btinternet.com)**



# Teaching and Learning Guide

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## Introduction

This Guide comprises teaching and learning material for the four units of the MIPS programme:

**Healthy Skin** is introduced by pupils' investigation into the nature and function of their own skin, supported by your expertise. Later weeks cover dangers to their skin including chemicals, sharp objects and, in particular, over-exposure to the Sun. You will help children understand how these dangers can be avoided.

**Healthy Heart and Lungs** asks pupils to consider their hearts and lungs as essential body organs that they need to keep in fit condition to live healthy lives. It covers the effect of exercise, or lack of it, and the dangers of nicotine, tar and alcohol, together with an introduction to lung disorders like asthma and bronchitis. The final week teaches pupils about blood, and its composition and circulation.

**Healthy Brain** asks pupils to investigate how they learn about the outside world, and how they learn from the outside world. They investigate how their memory works, and how they can improve their thinking, memory and learning. Finally they draw up a list of rules for a healthy mind.

**Healthy Living** covers aspects of keeping healthy and safe at home. Each sub-unit is self-standing: you can choose either to cover all three in any order, or a fewer number as time permits. The first unit looks at problems of keeping warm, and the dangers of hypothermia. This may be followed by a unit on nutrition, and the effective and safe storage and preparation of food, emphasising the necessity for clean handling. A final unit covers accidents in the home and how to avoid them.

Each unit includes a number of themes in the form of questions to be answered. Development of each theme is preceded by a list of objectives: *Pupils should learn ....* It's worth looking over these near the end of each theme to check that you have covered most of the objectives.

As the total time required to cover these units completely is about 12 weeks, you are unlikely to use all the material. Although each unit is divided into three weekly lessons, please regard this as advisory only, and discuss with your teacher how the material can be used most effectively. You should work out a programme with your teacher during your observation day.

The class may already be familiar with some elements of the programme. These can be omitted, or the teacher may want you to cover them as reinforcement. If you feel it might be worthwhile to cover other aspects of health education, please do so – after first checking with your teacher.

The revised Northern Ireland Curriculum, introduced in 2007, has reached Year 7 (P7), which is the Year you are most likely to be teaching. This curriculum has an emphasis on developing skills and capabilities, rather than learning factual material. It is designed *to develop the young person as an individual, as a contributor to society, and as a contributor to the economy and the environment*. Central to this is a focus on **Personal Development and Mutual Understanding** (PD&MU) of which **Personal Understanding and Health** is a part. There is also an emphasis on developing the cross-curricular skills of **Communication, Using Mathematics**, and **Using ICT** (information and communication technology). You can find more information about the revised curriculum on the website: [www.nicurriculum.org.uk](http://www.nicurriculum.org.uk). The 'Big Picture' included in this pack provides an overview of the primary curriculum.

Within *Personal Understanding and Health*, teachers are expected to enable their pupils to:

- understand the benefits of a healthy lifestyle, including physical activity, healthy eating, rest and hygiene,
- recognise what shapes positive mental health,
- know about the harmful effects of tobacco, alcohol and solvents,
- understand that bacteria and viruses affect health, and that risks can be decreased when basic routines are followed,
- know how the body grows and develops,
- know the ways in which they learn best,
- identify and practice effective learning strategies,
- know about the potential dangers and threats in the home and environment,
- develop a proactive and responsible approach to safety.

**Discuss with your teacher how your activity in the classroom can help pupils meet these objectives.**

The curriculum lays particular emphasis on Communication, Using Mathematics, and Using ICT, and Government is placing growing emphasis on the importance of mathematics within the STEM (Science, Technology, Engineering and Mathematics) context. You should also discuss with your teacher opportunities that may arise for developing these skills. Examples are given where relevant in each unit.

There are references to **activity sheets** in each unit. These can be accessed on the Sentinus website [www.sentinus.co.uk](http://www.sentinus.co.uk). Click on the MIPS link. These are Word documents: please feel free to amend these to meet your own requirements. If you develop an activity sheet you think would be useful to others, please email it as an attachment to [info@sentinus.co.uk](mailto:info@sentinus.co.uk), for inclusion on the site.

Websites are listed at appropriate points in the units. Most of these are for your own background information, but several can be used directly with pupils if the classroom has an interactive whiteboard and access to the Internet. As well as sites referred to in the units, the following general sites may be useful:

- [www.abpischools.org.uk](http://www.abpischools.org.uk) (Association of the British Pharmaceutical Industry). Click on 7 – 11, then *Science*, then *Medicines to Treat Disease* - a series of powerpoints, covering bacteria, medicines in the body, drugs in the body (legal and illegal). *Body Builder*, accessed from the same screen is also useful. Free A2 posters are available: *Medicine* and *Always use medicines safely*: see [www.abpischools.org.uk/page/publications.cfm](http://www.abpischools.org.uk/page/publications.cfm). Explore the website for other relevant material.
- [www.classroom-assistant.net](http://www.classroom-assistant.net) (World of Dyslexia). This is a general site for classroom and learning support assistants. Click on *Teaching methods*, *Confidence building* and *Resources* for useful information.
- <http://yucky.kids.discovery.com> (Discovery Communications Inc (USA))
- [www.learn.co.uk](http://www.learn.co.uk) (The Guardian). Your primary school may already subscribe to this service. You can use the resource free for 14 days.
- [www.sgm.ac.uk](http://www.sgm.ac.uk) (Society for General Microbiology). Click on *Education and Careers*, then *Educational resources for schools*, then *KS2 resources*
- [www.pfizerlearninglab.co.uk](http://www.pfizerlearninglab.co.uk) (Pfizer Limited). Click on *Blood, scabs, acids and food* or *Exciting science for kids*
- [www.primryupd8.org.uk](http://www.primryupd8.org.uk) (ASE (Association for Science Education)) This resource is available free through the NI Curriculum site: see [www.nicurriculum.org.uk/key\\_stages\\_1\\_and\\_2/areas\\_of\\_learning/the\\_world\\_around\\_us/activities/index.asp](http://www.nicurriculum.org.uk/key_stages_1_and_2/areas_of_learning/the_world_around_us/activities/index.asp)

**Please discuss each unit with your teacher before starting it, and act on her / his advice. In particular, view any video or internet material you intend to use in advance, and check with your teacher before you show it to pupils.**

# Unit 1 - Healthy Skin

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Please discuss this guidance material with your teacher before starting the unit, and act on her / his advice.

*Healthy Skin* is **not** part of the Northern Ireland Key Stage 2 Curriculum, and is unlikely to have been covered. You should work on the assumption that most of this material is new to pupils.

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## Week 1

1. What is skin?
2. What does it do?

*Pupils should learn:*

- the structure of the skin, including its basic components (they need not remember the diagram, but they should understand the relationships between components)
- the purpose each component of the skin

**Check in advance if the school has these resources:**

- lenses (+20D, if available) or hand magnifier
- Sellotape (for skin peeling)
- "head" and other types of thermometer
- Skin wallchart (if not available, use the ABPI website - see below): *Skin Structure and function*, page 2)
- (if available) temperature sensors and computer, microscopes

The theme should be developed through your questioning of the children.

Ask children to look at their own skin (or a Sellotape peeling) through a lens (microscope if available). Ask them to draw and describe what they see. You may find activity sheet S1: *Magnification* useful here.

Ask them to find out the temperature of their skin. How does this compare with the temperature of the air around them? What are the implications of this? Elicit the response: Loss of heat energy to the air, so there must be a source of energy inside the body (from food), and a means of insulation, which can be within the skin (fat) or outside (clothes). This can be linked to the *Healthy Living* unit.

Develop a diagram of the skin (which should be similar to Figure S1) from children's answers to questions. Do **not** show the diagram / wallchart / website as a first step. The diagram on page 2 of the ABPI resource listed below can be used here at the end of the topic for consolidation or revision.

Pupils should know that skin includes the following components:

- (1) surface (\*epidermis),
  - (2) soft tissue (\*dermis),
  - (3) hair and oil glands,
  - (4) sweat glands,
  - (5) nerves,
  - (6) blood (\*arteries > capillaries > veins), and
  - (7) fat
- (\* these terms should be discussed, but not necessarily to be remembered by pupils)

Ask the question: What is each component for?

Pupils should understand the operation of each of these components in relation to

- (1) temperature control,
- (2) heat insulation,
- (3) energy storage
- (4) sense of touch, and
- (5) protection from harm.

Not all of these objectives will be achieved during the first day. Some may be covered at appropriate points later, in relation to dangers to the skin.

### Useful websites

[www.bad.org.uk](http://www.bad.org.uk) (British Association of Dermatologists). Click on *BAD Patient Information Leaflets* for information on professional leaflets and presentations on skin, which can be downloaded

[www.bbc.co.uk/science/humanbody](http://www.bbc.co.uk/science/humanbody) (BBC Science) Click on *Organs*, then *Skin*

[www.abpischools.org.uk](http://www.abpischools.org.uk) (ABPI: Association of the British Pharmaceutical Industry). Click on *14 – 16*, then *Science*, then *Skin Structure and Function* This is written for Key Stage 4, but edited material can be used at primary level

## Week 2

### 3. How can we protect our skin, and keep it healthy?

Note: this should **not** be regarded as a first aid session, as most schools have their own policies and procedures on first aid.

*Pupils should learn:*

- *about potential dangers to their skin*
- *how they can be protected from these dangers*

*Glow germ* units for the assessment of hand washing technique are useful here. Children sprinkle a powder on their hands, and then put their hands under the light. The bacteria glow. The children then wash their hands and repeat the exercise. On the second occasion the amount of bacteria is reduced (but not eliminated). The boxes are stored in the Clinical Skills Education Centre, Medical Biology Centre.

The units must be booked on-line at [www.qub.ac.uk/cskills/Resources.htm](http://www.qub.ac.uk/cskills/Resources.htm)

What can attack the skin?

dirt, chemicals, sharp objects, germs (sun is covered in week 3)

Questioning: What protection is needed against each of these dangers, and how can we ensure this protection?

Identify dangers to the skin:

- (1) dirt,
- (2) chemicals,
- (3) sharp objects and
- (4) germs / \*bacteria

Identify means of protecting the skin from these dangers: importance of hygiene and skincare, bathing and hand washing, safe handling of tools and chemicals.

Activity sheet S2: *Saving my skin* may be useful here for consolidation and revision

### **Week 3**

#### **4. How can we protect our skin from the sun, and keep it healthy?**

Identify dangers to the skin:

- (5) excessive sun exposure

Identify means of protecting the skin from dangers associated with the sun

#### **Resources**

On the website [www.careinthesun.org](http://www.careinthesun.org), managed by Ulster Cancer Foundation, there are downloadable resources including teachers' guides, background information and statistics, as well as activities for children.

#### **Useful website**

[www.sunsmart.org.uk](http://www.sunsmart.org.uk) (Cancer Research UK). Click on *Resources* leading to *Resources for schools* for activity plans and worksheets, which can be downloaded. You should also access *Schools and sun protection* on this site for useful information

#### **5. What else can we find out about our skin?**

If you have time and expertise, other possible topics include: plastic surgery, aging, acne and eczema, fingerprinting. Enter these words or phrases into a search engine for more information and ideas.

### **Developing cross-curricular skills in *Healthy Skin***

#### **Communication:**

- using scientific words and phrases related to the units, for example, nerves, blood, insulate, thermometer, degrees Celsius, room temperature, body temperature.
- making posters to illustrate, for example, protection from the sun
- reporting on investigations, using a range of media including paper, electronic, verbal class presentations

**Using mathematics:**

- accurate thermometer reading,
- drawing tables and appropriate types of graph
- estimating the magnification of a lens

**Using ICT:**

- sensor measurement of temperature (if available),
- word processing and presentation of information,
- accessing information on websites, and choosing appropriate material

# Unit 2 - Healthy Heart and Lungs

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**Please discuss this guidance material with your teacher before starting this unit, and act on her / his advice.**

Apart from the section on blood, some of this material may already have been covered by your class. Your role may be to reinforce the children's knowledge and understanding of the structure, function and protection of heart and lungs rather than teach these as new material (weeks 1 and 2). They are unlikely to have covered the function of blood in detail (week 3).

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## Week 1

- 1. What is our heart, and what does it do?**
- 2. How can we keep our heart healthy?**

*Pupils should learn:*

- *the location of the heart within the body, and its relationship with other organs*
- *how circulation of the blood was discovered by William Harvey*
- *that the heart is a muscular pump that pumps blood around the body*
- *what is meant by blood pressure*
- *the positive effect of diet and exercise on the heart*
- *the negative effects of nicotine, tar and carbon monoxide in cigarette smoke*

The themes can be developed through your questioning of the children. Find out what they already know about the heart.

Ask them to predict what can change pulse rate. Ask them to measure their pulse rate (i) before exercise, (ii) immediately after exercise, (iii) three minutes later (if possible, average of three measurements). What can they learn from their results? Use a line graph of pulse rate against time immediately before, during and after exercise. Look at: mean value for the class, boy / girl variation, bar chart of ranges.

You may find activity sheet H1: *Pulse rate* useful here

Develop an outline diagram of the heart from children's answers to questions, your own knowledge, and information from the Internet (see the website list below). What is each component for? Note that most school Internet information is aimed at 11 - 16, rather than primary, and will need to be simplified. Identify components of the heart's structure.

### Resources

- British Heart Foundation material  
(provided by the School of Medicine, Dentistry and Biomedical Sciences)
- exercise space and facilities
- clocks / stopwatches
- graph paper

## Useful websites

- [www.abpischools.org.uk](http://www.abpischools.org.uk) (Association of the British Pharmaceutical Industry) - click on *site map*, then (14-16) *heart and circulation*. This is written for Key Stage 4, but edited material can be used at primary level
- [www.bhf.org.uk](http://www.bhf.org.uk) (British Heart Foundation). Click on *site map*, then appropriate items from Lifestyle, Heart Conditions, and Treatment. Click on *Keeping your heart healthy*, then appropriate items from the menu, for example: *Information for teachers*, *Healthy children* and *Heart animations*. Free resource material is available: some of this is provided in the MIPS training pack. See also the catalogue provided in the pack.
- [www.4teachers.com](http://www.4teachers.com) - click on *science: anatomy*, then *The Heart Preview Gallery*
- [www.bbc.co.uk/sn](http://www.bbc.co.uk/sn) - click on *Human Body and Mind*, then on the relevant organ
- [www.activescience-gsk.com](http://www.activescience-gsk.com) (GlaxoSmithKline) Pupil material. Click on *The Heart*
- [www.whackyscience.co.uk](http://www.whackyscience.co.uk) (Bayer Group). Material designed for the English KS2 science curriculum. Click on *body* then *Keep circulating* for a series of one or two page pdf activity sheets on blood, the heart and circulation, pulse rates etc
- [www.bbc.co.uk/history/historic\\_figures/harvey\\_william.shtml](http://www.bbc.co.uk/history/historic_figures/harvey_william.shtml) for information on William Harvey. [http://en.wikipedia.org/wiki/William\\_Harvey](http://en.wikipedia.org/wiki/William_Harvey) provides links to additional information.
- [www.americanheart.org/presenter.jhtml?identifier=4473](http://www.americanheart.org/presenter.jhtml?identifier=4473) for information on blood pressure.

## Week 2

### 3. What are our lungs, and what do they do?

### 4. How can we keep our lungs healthy?

*Pupils should learn:*

- *the location of the lungs within the body, and their relationship with other organs*
- *that we need oxygen to stay alive, and that this comes from the air*
- *how circulation and respiration relate in order to maintain healthy bodies*
- *that air enters the lungs by breathing*
- *the effects of coughing and sneezing in spreading disease*
- *about asthma*
- *the effect of exercise on the lung and diaphragm muscles*
- *that smoking can cause lung cancer, emphysema and chronic bronchitis*

The themes can be developed through your questioning of the children. Find out what they already know about the lungs

Ask them to measure

- lung capacity
- their breathing rate before and after exercise

What can they learn from their results in (ii)?

Develop diagrams of the lungs from children's answers to questions, your own knowledge, and information from the Internet. Identify its structure. What is each component for?

Identify dangers to the lungs (from children's answers to questioning):

- (1) dust and dirt (including asbestos),
- (2) chemicals,
- (3) cigarette smoke,
- (4) germs / bacteria

Ask the children what protection is needed against each of these, what protection do we already have, and how can we enhance this protection?

### Resources

- exercise space and facilities
- clocks / stopwatches
- means of measuring lung capacity

### Useful websites

- [www.abpischools.org.uk](http://www.abpischools.org.uk) (Association of the British Pharmaceutical Industry) - click on *site map*, then (11-14) *breathing and asthma*. This is written for Key Stage 3, but edited material can be used at primary level
- [www.lunguk.org](http://www.lunguk.org) - select appropriate items from *Your Lungs*, for example: *About your lungs*, *You and your lungs*, or *Childhood lung conditions*.

Many local primary schools are involved in the Smokebusters Club ([www.ulstercancer.org/smokebusters](http://www.ulstercancer.org/smokebusters)). Samples of Smokebusters material are included in the MIPS training pack.

## Week 3

### 5. What is our blood, and what does it do?

*Pupils should learn some of the following:*

- *that blood carries essential gases and food to all parts of the body*
- *the difference between arteries, capillaries and veins*
- *the function of red cells (oxygen and glucose carrying), white cells (disease protection) and platelets (clotting)*
- *the role of blood in developing resistance to disease*
- *what anaemia is, and how it is related to diet*
- *about the work of the Blood Transfusion Service*

Theme 5 can be developed through your questioning of the children. Find out what they already know about blood. Blood is not part of the current Key Stage 2 curriculum, so this is likely to be considerably less than they know about the heart and lungs. You may find activity sheet H2: *Blood, glorious blood* useful here for consolidation and revision

### Useful websites

- [www.nibts.org](http://www.nibts.org) (Northern Ireland Blood Transfusion Service) - click on *FAQs*, *Blood safety*, and *Links*
- [www.blood.co.uk](http://www.blood.co.uk) (National Blood Service) - click on *All About Blood*

## **Developing cross-curricular skills in *Healthy Heart and Lungs***

### **Communication:**

- using scientific words and phrases related to the units, for example, heart, lungs, circulation, respiration, red cells, white cells
- making posters to illustrate, for example, the action of the heart, lungs and blood, the dangers of tobacco smoke
- reporting on investigations, using a range of media including paper, electronic, verbal class presentations

### **Using mathematics:**

- accurate time measurement, volume measurement,
- drawing tables and appropriate types of graph
- calculating mean values of sets of results

### **Using ICT:**

- word processing and presentation of information,
- accessing information on websites, and choosing appropriate material.

# Unit 3 - Healthy Brain

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**Please discuss this guidance material with your teacher before starting the unit, and act on her / his advice.**

All Key Stage 2 classes have started the revised Northern Ireland Curriculum which is more clearly related than before to the process of thinking and learning. See [www.nicurriculum.org.uk](http://www.nicurriculum.org.uk). Click on *Key Stages 1 and 2*, then *The Northern Ireland Curriculum: Primary* (see pages 91 – 98 on *Personal Development and Mutual Understanding*). See also the curriculum 'Big Picture'. However, it is unlikely that teachers will have covered the brain or mind in any detail.

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Some basic ideas about the brain are listed in this unit, with a series of questions for development. It should be emphasised that, in the science of the brain at this level, children are expected to understand what is happening inside their heads, so that they can improve their thinking and learning - but they are not expected to remember anatomical terms or reproduce information or diagrams.

Also it should be emphasised that much of the information to be provided here is simplified, and will be studied in more detail later (in key stage 3). Note that the language used in this guide is aimed at you as an adult. Ask your teacher to help you simplify it for the children.

## Week 1

### 1. How do I learn about the outside world?

*Pupils should learn that we get information from the outside world through our senses:*

- *seeing: what, where, how far, how close up, magnified, one or many, large or small*
- *hearing: range of sounds, loudness, pitch or frequency*
- *tasting: bitter, salty, sour, sweet, umami (savory)*
- *smelling: nice, nasty*
- *touching: texture, hardness, pain, pleasure*

These themes can be developed through your questioning of the children. Develop the idea of perception.

This can start from the questions:

- How do we know what is outside of us?
- What are our senses? Where are they?
- What sort of information do our senses provide?
- How do they connect with our brains?

Children can actively 'brainstorm': What can I find out about the world around us by touching / seeing / smelling / hearing / tasting?

You can find further information on: <http://faculty.washington.edu/chudler/chsense.html> (Neuroscience for Kids) and <http://en.wikipedia.org/wiki/Sense>

Perception, using our senses, is the first step towards making sense of the world around us. Senses have ranges of sensitivity. Is it possible to increase our sound sensitivity, for example? Ask children to listen more carefully to quiet sounds. Notice the range of sounds in environment: record these / classify them / what criteria can we use for classifying? Are there sounds we 'don't notice' in everyday life?

Use a similar exercise for seeing, leading to the use of magnifying glasses (and the idea that our senses can be enhanced through the appropriate technology). Develop ideas on the physical processes of

seeing. Try and get as much information as possible through questioning the pupils. A possible sequence might be:

- structure of the eye
- function of the parts of the eye
- what can go wrong with each of these parts
- what can be done if something goes wrong
- how the operation of the eye be improved

Use a similar exercise for the ear.

A useful website for further information is [www.bbc.co.uk/sn](http://www.bbc.co.uk/sn). Click on Human Body and Mind then The Nervous System, then Sight or Hearing

## **Week 2**

### **2. What does my brain do for me?**

*Pupils should learn that the brain (inside our head) is the part of our body that*

- *converts sense inputs into useful information*
- *instructs our muscles (including our voice muscles)*

Start from where the children are, with questions:

- What enables us to process the information we get from our senses?
- How do we respond to what's happening outside of us?
- What enables us to do things?

Find out what they already know about their brains. Ask them first in pairs, then in small groups to list as many things they do at school or at home that they can think of in two minutes. For example, clean their teeth in the morning, look and listen before crossing the road. Assemble a class list of about ten activities. After they present their responses, link their activities with brain structures.

The brain structure cannot be deduced by pupils, but might come from an internet / library search exercise, leading to a simplified diagram. See:-

[www.bbc.co.uk/science/humanbody/body/interactives/organs/brainmap/](http://www.bbc.co.uk/science/humanbody/body/interactives/organs/brainmap/) for an interactive map of the human brain. Emphasise that this division is an oversimplification, but will be developed at secondary school.

Pupils should be aware that there are effectively four parts to the brain:

- the brain stem (which is responsible for instinctive reactions),
- the cerebellum (coordinating movement and balance),
- the limbic system (emotional responses, developing long term memory, routing information, controlling automatic functions),
- the cortex or cerebrum (conscious thought, communication),

and that parts of the brain are connected by nerves called neurons (electric circuit analogy).

Note that pupils are not expected to remember the names of parts of the brain.

Emphasise that, while neuroscientists are learning a lot about our brains, there is even more we don't know.

### **Useful websites**

- <http://serendip.brynmawr.edu/bb/kinser/Structure1.html> (*Brain Structures and their Functions*),
- [www.bbc.co.uk/science/humanbody/body/factfiles/brain/brain.shtml](http://www.bbc.co.uk/science/humanbody/body/factfiles/brain/brain.shtml)
- [www.sfn.org/index.cfm?pagename=neuroscientistTeacherPartners](http://www.sfn.org/index.cfm?pagename=neuroscientistTeacherPartners). ((USA) Society for Neuroscience). Click on *Neuroscience Education Resources*.
- [www.ndgo.net/sfn/nerve](http://www.ndgo.net/sfn/nerve) is also relevant.

### 3. How can I learn from the outside world?

*Pupils should learn that we learn through our interaction with the environment (adaptation or accommodation). When we meet a new experience or a problem in the environment, we either:*

- *change the environment around us (for example, open a door so that we can go through it, or organise a group to clear up litter on a local beach), or*
- *change ourselves, the neuron connection structure in our brain (know not to touch a hot kettle next time)*
  - *which is the process of learning.*

*and so we learn from experience.*

This is common sense, and should be developed from questioning the pupils about their experiences in learning: How did you learn to play football, cook a meal, about energy ....? Introduce *neurons* simply as the electrical connections in the brain and spinal cord – like a computer (though emphasise that the human brain can do much more than the fastest computer).

Ask about conditions for effective learning: challenging (but not stressful) environment, light and colour, temperature and humidity, food and drink, stimulus through the senses. What would be an ideal place to learn? Ask pupils to draw a picture or diagram of an ideal learning environment.

This may lead into the idea of learning styles (aural, visual, kinaesthetic – though not using these terms: hearing, seeing and feeling / doing may be more appropriate at this level). Show that a balance of all styles is good, because it will be important for children to learn through all their senses as they grow up. Emphasise that people are different: there is no general 'best' way, but there may be a best way for you or me. Also show that different people have different capabilities (music, sport, mathematics, language, for example).

You can find further information on: [http://en.wikipedia.org/wiki/Learning\\_styles](http://en.wikipedia.org/wiki/Learning_styles) and [http://en.wikipedia.org/wiki/Multiple\\_intelligences](http://en.wikipedia.org/wiki/Multiple_intelligences)

Show the need for a variety of learning experiences using all the senses, that allows development of both the strength and the breadth of hearing, seeing and feeling / doing learning, because breadth will be needed in the future real world: “I learn best by working with my hands, and I'm also improving my ability to learn by seeing and listening”.

Ask what can go wrong (examples: injury, epilepsy, Alzheimer's disease etc).

**You must be sensitive here: ask for and accept your teacher's direction regarding any pupil with a brain impairment, or may have a brain impaired relation or friend.**

Elderly or injured people may learn to walk and move again, and you can learn to write with your 'other' hand if your arm is in plaster. But why is this not the case if the spinal cord is severed? This leads to the idea of sensory-motor structures, and how these pathways serve electrochemical signals that may stimulate regeneration.

Tell the story of Phineas Gage (use a search engine for information on him) as an introduction to the idea that we learn a lot about how the brain works from how it doesn't work properly when it's damaged.

Play some mind games to indicate the complexity of the human brain (use a search engine for 'mind games', but check these in advance for appropriateness).

### **Week 3**

#### **4. How does my memory work?**

#### **5. How can I improve my memory and learning?**

*Pupils should learn that reinforcing neuron connections develops memory and learning.*

What things do I need to remember? Ask your teacher about a topic that the children have covered recently in class.

1. Ask each child to write down the important points of the topic.
2. Ask them to share their ideas in pairs, then small groups.
3. Then ask each group to organise their material into a map / spray diagram, or other means of presentation, so that they can remember it easily. They have to think about clustering material, connecting it to other material, using mnemonics, and presenting it so that others can understand it. See <http://systems.open.ac.uk/materials/t552/pages/spray/sprayAppendix.html> for further information on spray diagrams and mind maps.

Ask students to investigate different types of memory (from: working, recall, recognition, episodic, semantic, procedural – they need to get the ideas, rather than the names). Some emphasis on the importance of different ways of reinforcement of neuron connections in memory (which can be different for different people), for example: mnemonics. You can find further information on: <http://en.wikipedia.org/wiki/Memory>

Not reinforcing causes withering of the connections (for example, reducing their ability to learn a second language after the age of two or three). On the basis of what pupils have learned about how memories are stored in the brain, develop means of improving memory: structuring the information, teaching others.

How well you learn depends on learning actively rather than passively. One of the most effective means of learning is to have to teach others what you have just learned. This reinforces the neuron connections. Typical retention rates are ([www.cofc.edu/bellsandwhistles/research/retentionmodel.html](http://www.cofc.edu/bellsandwhistles/research/retentionmodel.html)):

Lecture / listening	5%
Reading	10%
Audio-visual	20%
Demonstration	30%
Discussion group	50%
Practice by doing	75%
Teaching others	90%
Immediate use of learning	90%

#### **6. How can I look after my brain?**

*Pupils should learn how to look after physical aspects of their brains.*

Ask the children for answers to the question: How can I look after my brain? Then group ideas, possibly including:

- Have a broad, balanced diet. Identify diet fads and fashions. Emphasise the importance of factual research-based knowledge.
- Take appropriate body and brain exercise: ensure effective breathing and blood circulation to carry oxygen to your brain. Do thinking exercises in puzzles and games.
- Have enough sleep and rest, for recovery. But - there are many things that we don't understand about the brain and sleep.
- Protect it: Wear a cycle helmet and sports protection. Know that fire kills by suffocation more often than burning (so oxygen doesn't get to the brain). Learn to swim

## **7. What rules can I use to help me develop a healthy mind**

*Pupils should learn how to look after mental aspects of their brains.*

The Northern Ireland Curriculum PDMU (Personal Development and Mutual Understanding) Year 7 *Living Learning Together*, Unit 2: *Thinking and Feeling* may be useful in this section. See [www.nicurriculum.org.uk/key\\_stages\\_1\\_and\\_2/areas\\_of\\_learning/pdmu/living\\_learning\\_together/year7.asp](http://www.nicurriculum.org.uk/key_stages_1_and_2/areas_of_learning/pdmu/living_learning_together/year7.asp). Please discuss this with your teacher, and check if pupils have covered this unit.

Ask the class to develop ten rules for a healthy mind. Five should be related to themselves as individuals, five to relationships to other people.

1. Ask each child to write down two rules in each area (self, and others).
2. Ask them to share their ideas in pairs, then small groups.
3. Then ask the class to organise their material into a list of ten agreed rules

Some possibilities are listed below.

You may find Activity Sheet B1: *Rules for a healthy mind* useful here.

### **To develop a healthy mind, I should:**

- experience a range of feelings, and express these sensitively
- know that I am a worthwhile person, and different to everybody else
- identify what I can do well, and what I want to improve
- exercise both my mind and body
- set aims and achieve them, but get over it when things go wrong
- expect to be able to do things, and then get on with the job
- understand the difference between right and wrong
- realise that I am changing as I grow up
- be creative: do something creative every day
- be able to enjoy myself, and do things on my own

### **To develop a healthy relationship with others, I should:**

- express my feelings sensitively
- accept that other people are different, and may express their feelings differently
- make promises, and then keep them

- assert myself without being unpleasant: recognise other people's points of view
- have good relations with my family, friends and other people.
- make time for my family, friends and other people
- share problems with my family, friends and other people
- accept and give thanks, congratulations and apologies when appropriate
- accept support from, and give support to my family, friends and other people
- get involved in something that makes me work or play with people outside my family

### **Developing cross-curricular skills in *Healthy Brain***

#### **Communication:**

- using scientific words and phrases related to the units, for example, brain stem, cerebellum, limbic system
- making posters to illustrate, for example, to show the simple structure of the brain
- reporting on what they have learned, using a range of media including paper, electronic, verbal class presentations

#### **Using ICT:**

- word processing and presentation of information,
- accessing information on websites, and choosing appropriate material

# Unit 4 - Healthy Living

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**Please discuss this guidance material with your teacher before starting this unit, and act on her / his advice**

Some parts of this material may already have been covered by your class. Your role may be to reinforce pupils' knowledge and understanding of these areas, rather to teach them as new material.

This unit covers three aspects of keeping healthy and safe at home:

- **Keeping warm** (week 1) - investigating the thermal properties of insulators, and relating this to heating in pupils' homes, and the problem of hypothermia,
- **Using food effectively and safely** (week 2), - looking at the relationship between a healthy and safe diet and the development of their bodies, and
- **Avoiding accidents at home** (week 3)

Each of these sub-units is self-standing, and you can choose either to cover all three in any order, or a fewer number as time permits.

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## Week 1

### How can I keep warm when it's cold outside?

*Pupils should learn:*

- *that temperature is a numerical measure of how warm / hot something is*
- *how to investigate different types of insulation*
- *to relate the thermal properties of materials to their uses*

These themes can be developed through your questioning of the children. Find out what they already know about keeping warm.

- Revise the Celsius scale: 0°C for freezing, 100°C for boiling. Ask them to guess where (i) room temperature, (ii) body temperature are on this scale. They should be aware that room temperature is about 20°C, and body temperature is just under 40°C. Draw attention to the fact that our body temperature is well above room temperature. Ask about the implications of this (need to convert food to energy in the body, risk of hypothermia).

**Check in advance if the school has sufficient equipment to do the following insulation investigation as a class experiment. If not, you may have to do it as a demonstration.**

#### Investigation: Planning

- Ask pupils to tell you what sort of materials they use to keep themselves warm in winter.
- Ask pupils how they could investigate which materials are best at keeping things warm.
- Help them plan (and do) an investigation into what materials prevent a container of warm water from cooling down quickly.
- Ask how they will ensure a 'fair test' (identical containers, same amount of hot water, same starting temperature), and how often and for how long the temperature of the water should be recorded. You can get ideas for this experiment by entering 'insulation experiment' into a search engine. For example: [www.simplyinsulate.com/content/resources/science.html](http://www.simplyinsulate.com/content/resources/science.html) or [www.sciencelay.com/Chemistry/An-Insulation-Experiment.116429](http://www.sciencelay.com/Chemistry/An-Insulation-Experiment.116429)

### **Investigation: Doing**

School facilities vary, but a possible set up may be to have a yogurt pot of warm water in a shoebox, and place the insulator between the yogurt pot and the inside of the box. Record the temperature every two minutes for about twenty minutes. You may find activity sheet L1: *Cooling down* useful here.

Ask different groups to record temperature changes for different materials, to draw appropriate graphs, to interpret their results, and to compare results and conclusions: which is the best and the worst insulator? Emphasise that things (including our bodies) cool if the surroundings are at a lower temperature, but the rate of cooling can be slowed by effective insulation. You might refer back to fat as a body insulator if you have already covered *Healthy Skin*

Possibly raise the issue of the amount of heat energy lost by our bodies having to be balanced by the energy provided by our food. Raise the problem of hypothermia (old people in cold homes, people who fall into the sea in winter), and how it can be prevented.

### **Investigation: Recording and reporting**

Emphasise that an investigation is not complete until a report has been produced. Ask how this might be done: formal report, A4 news-sheet, electronic presentation. It is unlikely that there will be time to complete this during your afternoon in school, but pupils might be asked to prepare a report in class to show you next week.

### **Issues for discussion:**

- The amount of heat energy lost by our bodies (because our surroundings are colder than we are) has to be balanced by the energy provided by our food.
- Hypothermia is a problem (old people in cold homes, people who fall into the sea in winter). How can heat energy loss be prevented.
- How do animals keep themselves warm in winter? Fur, colour, hibernation etc.

### **Resources**

- types of thermometer recommended for primary schools
- suitable containers, for example yogurt pots for the warm water, and shoe boxes for containing the insulating material
- insulating materials, for example: bubble wrap, aluminium foil, woollen blanket, cotton wool, paper, polystyrene, polythene.

## **Week 2**

### **How can I use food effectively?**

*Pupils should learn:*

- *the location of the organs of the digestive system including the stomach, small and large intestines, liver, bladder and kidneys*
- *how different types of food are used in the body*
- *what can go wrong in our bodies, related to food*
- *what is a 'good diet'*
- *learn about factors that contribute to good health including diet and hygiene*
- *investigate how basic life processes, including digestion relate to maintaining healthy bodies.*

It may be useful to start with a revision of their knowledge and understanding of the relationship between the main organs (stomach, small and large intestines, liver, bladder, kidneys) of their digestive system. You might ask them to place these organs on an outline of the human body.

This theme can be developed through your questioning of the children. Find out what they already know about nutrition. Ask pupils what food is for. Discuss the nutrients:

- carbohydrates (energy)
- fats (energy storage)
- protein (body development)
- vitamins (A, C, D)
- minerals (sodium, potassium, calcium, iron etc)
- fibre
- water

You may find activity sheet L2: *What is food for?* useful here

What can go wrong? Ask pupils what happens if you eat food inappropriately. (Develop this sensitively in relation to obese or underweight pupils). Diet related conditions include:

- coronary heart disease / hypertension
- cancers
- being overweight / obesity
- dental problems
- other diet issues: iron deficiency, coeliac disease, diabetes, anorexia, bulimia, food allergies and intolerance

In the light of this, ask what is a 'good diet'.

### Resources

- Public Health Agency publications (for background): Nutrition fact file (2000), A Handbook on Nutrition in Northern Ireland (1997), Eating for health? (2001) (Available on the Public Health Agency website: [www.healthpromotionagency.org.uk](http://www.healthpromotionagency.org.uk) - click on *Publications Archive*).
- a range of food labels with nutrition information

### Useful websites

- [www.bbc.co.uk/health](http://www.bbc.co.uk/health) (BBC Health). Click on *Healthy Living*, then *Nutrition*, choose from *The basics*.
- [www.bbc.co.uk/science/humanbody/body/factfiles/organs\\_anatomy.shtml](http://www.bbc.co.uk/science/humanbody/body/factfiles/organs_anatomy.shtml). Choose a digestive organ
- [www.abpischools.org.uk/page/modules/digestion/.cfm](http://www.abpischools.org.uk/page/modules/digestion/.cfm) (Association of the British Pharmaceutical Industry)
- [www.activescience-gsk.com](http://www.activescience-gsk.com) (GlaxoSmithKline). Pupil material. Click on *Balanced Diet*
- [www.whackyscience.co.uk](http://www.whackyscience.co.uk) (Bayer Group). Material designed for the English KS2 science curriculum. Click on *body* then *Food, Glorious Food* for a series of one or two page pdf activity sheets on calories, E numbers, healthy eating etc

### 3. How can I use food safely?

*Pupils should learn:*

- *how food can become unfit to eat*
- *what can be done to avoid different types of contamination*
- *how different types of food can be packaged and stored safely*

This theme can be developed through your questioning of the children. Find out what they already know about food safety. Ask pupils to say what can go wrong with food (contamination by bacteria or pests (animals or insects), and deterioration):

- raw meat
- cooked meat
- frozen food
- chilled food
- canned food (meat, fruit, vegetables etc)
- fruit juices (bottles, waxed containers etc)
- milk

Contamination (link this with the *Glow Germ* hand washing exercise in week 2 of *Healthy Skin*):

- types of contamination (toxins, e coli, salmonella etc)
- how it happens
- its effect on the food, and on the consumer
- how contamination can be prevented.

**Contamination:** Bacteria divide every 20 minutes as long as they have adequate food, liquid and warmth. Start with 1. Ask pupils to say how many there will be after 20 minutes, 40 minutes, 1 hour .... Go on as long as you like (after 10 hours there will be over 400 million).

**Packaging:** Ask pupils to say why specific types of packaging are used for particular foods. It's useful to have examples (see *Resources* below, including the websites).

**Storage:** Provide pupil groups with A3 size 'cupboard', 'refrigerator' and 'freezer' pages, and small cards with pictures of, for example, packs of flour, tomato sauce, milk, baked beans, canned soup, frozen peas, cheese, butter, sausages, eggs, yogurt, pasta etc. Ask them to place each in its proper storage. More than one answer may be acceptable. Emphasise "always read the label".

### **Resources**

- if available, needle thermometer for checking cooked food temperature
- sample packaging materials for food preservation, for example: cans, waxed boxes, bottles (glass and plastic)
- 'storage' and 'food packs' material

### **Useful websites**

- [www.howstuffworks.com/food-preservation.htm](http://www.howstuffworks.com/food-preservation.htm)
- [http://en.wikipedia.org/wiki/Food\\_preservation](http://en.wikipedia.org/wiki/Food_preservation)

## **Week 3**

## How can I avoid accidents at home?

Note: this should **not** be regarded as a first aid session, as most schools have their own policies and procedures on first aid.

*Pupils should learn:*

- about the variety of dangers in the home
- how dangers in the home can be eliminated or avoided

This theme can be developed through your questioning of the children, and the use of *Spot the Dangers* sheets. Find out what they already know about home safety. Ask pupils to say

- where they think most accidents (in general) happen (see the statistics box below),
- where they think there were potential dangers at home,
- what can be done to prevent accidents, and
- what should be done immediately if an accident happens (after calling 999 or 112 if necessary).

Discuss:

- electricity (fire, electrocution),
- stairs (falls),
- carpets, rugs, loose tiles (falls),
- cooking (chip pans, hot liquids)
- poisons (medicines, cleaning materials / bleaches)
- pets (infections, food poisoning)
- fire (importance of smoke alarms, escape plans, fire blankets) and fireworks

See *RoSPA Home Safety Checklists* and *NI Home Accident Prevention Strategy* (see the statistical information below). Website: [www.rospa.com](http://www.rospa.com) (UK general) and [www.rospa.com/ni](http://www.rospa.com/ni) (Northern Ireland).

There are some useful ideas and worksheets on

[www.rospa.com/safetyeducation/homesafety\\_curriculum.htm](http://www.rospa.com/safetyeducation/homesafety_curriculum.htm) (see Key Stage 2, and years 5 and 6. Note that Northern Ireland Year 7 is equivalent to England Year 6).

## Developing cross-curricular skills in *Healthy Living*

### Communication:

- using scientific words related to the units, for example, insulation, names of organs of the digestive system, carbohydrate, fat, protein, mineral, fibre
- making posters to illustrate, for example, the safe use of food, how to avoid accidents
- reporting on investigations, using a range of media including paper, electronic, verbal class presentations

### Using mathematics:

- estimation and accurate measurement of temperature,
- drawing tables and appropriate types of graph,
- understanding and applying mathematical information

### Using ICT:

- sensor measurement of temperature (if available),
- word processing and presentation of information,
- accessing information on websites, and choosing appropriate material

Statistics derived from

*Home Accident Prevention: Strategy and Action Plan 2004 – 2009*

[www.rospsa.com/ni/homesafety/strategy.htm](http://www.rospsa.com/ni/homesafety/strategy.htm)

A survey of sixteen Accident and Emergency departments in Northern Ireland (Accident and Emergency Survey. Pricewaterhouse Coopers for Department of Health, Social Services and Public Safety 2001) found that more accidents occurred inside the home (41.4%) than at work (15.2%) and on the roads (19.5%) put together:

- **Home 41.4%**
- Roads 19.5%
- Leisure / sport 17.1%
- Work 15.2%
- School / childcare 4.8%
- Other 2%

The survey also found that:

- 66% of home accidents occurred inside the home and 34% occurred directly outside the home – in the garden, yard, driveway, path and steps and boundaries
- 19.4% occurred in the under 5 years age group
- 39.2% of home accidents involved children aged 0 - 15 years
- 24.3% of home accidents involved adults in the 25 - 44 age range
- 11.9% of home accidents involved those aged over 65 years
- almost half of all home accidents occurred by either a fall on the same level, or being struck by an object

# **Medics in Primary Schools**

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## **Appendices**



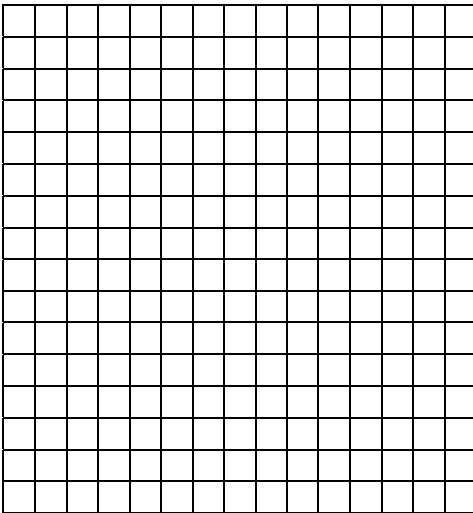
**Appendix 1**

Medics in Primary Schools

Activity Sheet

**Magnification**

**S1**



Try this. Look at the small squares to the left directly with one eye, and through the magnifying glass with the other.

How many squares seen directly can you see inside each square you see through the magnifying glass?

Draw a picture of your skin, as you see it through a magnifying glass or microscope



Now write two sentences to describe what you see



**Appendix 2**

<p>Medics in Primary Schools</p> <h1 style="margin: 0;">Saving My Skin</h1>	<p>Activity Sheet</p> <h1 style="margin: 0;">S2</h1>
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Your skin protects you from many dangers in the world around you. But there are many things that can harm your skin.

In the left column of the table below, list six things that can damage your skin. In the right column, say what you can do to prevent these things from harming you.

What might harm my skin?	What can I do to prevent this?

### Appendix 3

Medics in Primary Schools  <h1 style="margin: 0;">Pulse Rate</h1>	Activity Sheet  <h1 style="margin: 0;">H1</h1>
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Please measure and fill in your pulse rate below, (1) before you exercise, (2) just after you have exercised, and (3) five minutes after you have finished. Then find out and fill in the average for the class, and for girls and boys separately. You can draw a graph to show your results and, in the box at the bottom of the page, say what you learned from this activity

	Pulse Rate (in beats per minute)		
	before exercise	just after exercise	five minutes after exercise
Mine			
Mean value for the class			
Mean value for the girls			
Mean value for the boys			

Space for my graph

What did I learn from this activity?

**Appendix 4**

<p>Medics in Primary Schools</p> <h1 style="margin: 0;">Blood, Glorious Blood</h1>	<p>Activity Sheet</p> <h1 style="margin: 0;">H2</h1>
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This activity sheet is to help you summarise what you have learned about blood.

What does my blood do?	
What is the difference between my arteries, capillaries and veins?	Arteries
	Capillaries
	Veins
What do my red blood cells do?	
What do my white blood cells do?	
What do my blood platelets do?	
How does my blood help me resist disease?	
What is anaemia, and what can be done about it?	
What does the Northern Ireland Blood Transfusion Service do?	

## Appendix 5

Medics in Primary Schools	Activity Sheet
<b>Rules for a Healthy Mind</b>	<b>B1</b>

On your own, write down below two things you should do that will help you **develop a healthy mind for yourself.**

1.
2.

Now write down two things you should do that will help you **develop a healthy relationship with other people.**

1.
2.

After discussing your ideas with friends, write down any other things you should do that will help you develop a healthy mind for yourself.

--

After discussing your ideas with friends, write down two things you should do that will help you develop a healthy relationship with other people.

--

Now, in a small group, write down five rules for developing a healthy mind.

To develop a healthy mind, I should

- 1.
- 2.
- 3.
- 4.
- 5.

As a class, write down five rules for developing a healthy mind.

To develop a healthy mind, I should

- 1.
- 2.
- 3.
- 4.
- 5.

Now, in a small group, write down five rules for developing healthy relationships with other people.

To develop a healthy relationship with other people, I should

- 1.
- 2.
- 3.
- 4.
- 5.

As a class, write down five rules for developing healthy relationships with other people.

To develop a healthy relationship with other people, I should

- 1.
- 2.
- 3.
- 4.
- 5.

## Appendix 6

Medics in Primary Schools	Activity Sheet
<b>Cooling Down</b>	<b>L1</b>

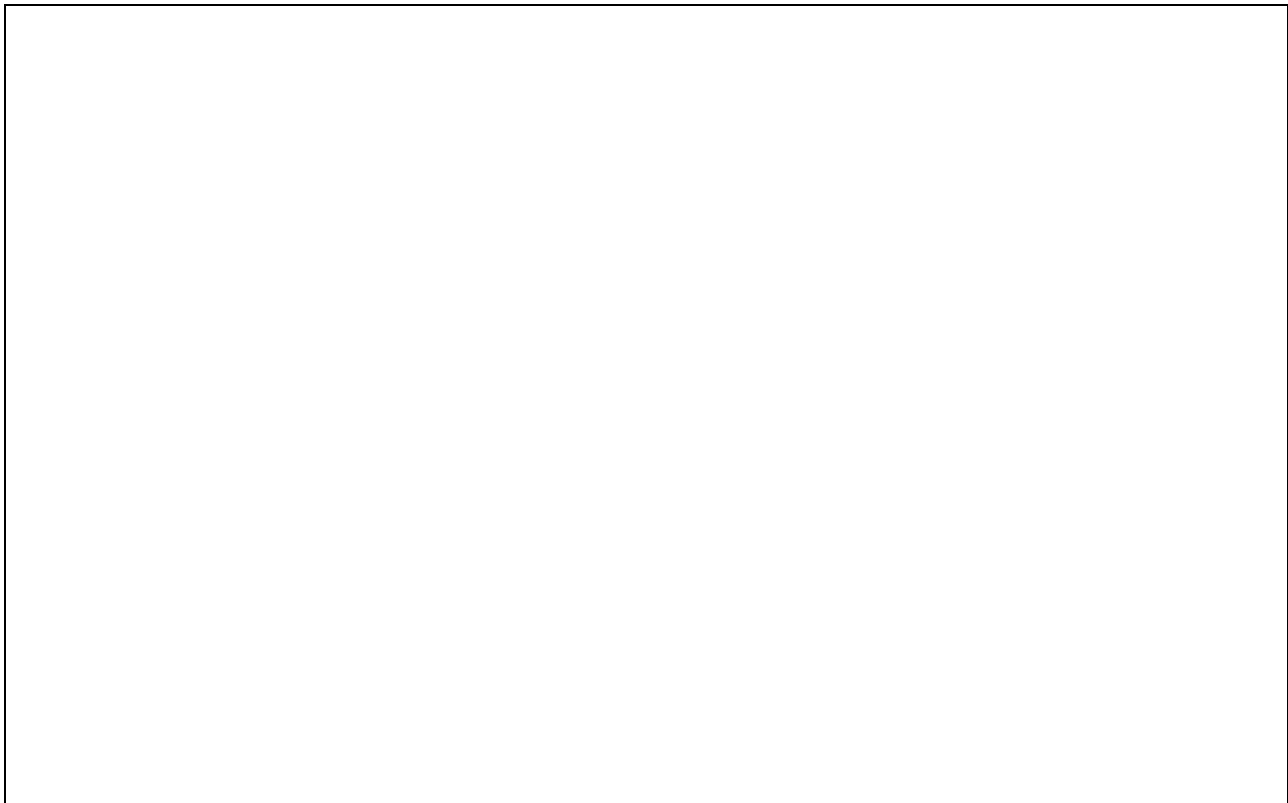
You are doing a cooling experiment. You have a yogurt pot of warm water in a shoebox, with some insulating material between the yogurt pot and the inside of the box. Write under **Insulator A** in the table below the type of insulating material you are using. Record the temperature every two minutes for about twenty minutes.

Now share your results with two other groups using different insulating materials. Write the name of these insulators under **Insulator B** and **Insulator C**, and fill in their results in your table.

Time from start (minutes)	Temperature (degrees Celsius)		
	Insulator A	Insulator B	Insulator C
0			
2			
4			
6			
8			
10			
12			
14			
16			
18			
20			

<b>Which was the best insulator?</b>	
<b>How do you know this?</b>	
<b>Which was the worst insulator?</b>	

Here is a space for a graph your medical student or teacher may ask you to draw



**Appendix 7**

<p>Medics in Primary Schools</p> <h1 style="margin: 0;">What is Food For?</h1>	<p>Activity Sheet</p> <h1 style="margin: 0;">L2</h1>
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Every day we eat lots of food. We use this to build our bodies and enable us to do things like breathing and running about. There are many different things called ‘nutrients’ in food. In the boxes below write down what these nutrients are for.

<b>Nutrient</b>	<b>What is the nutrient for?</b>
<b>carbohydrates</b>	
<b>fats</b>	
<b>proteins</b>	
<b>vitamins</b> (list some specific vitamins)	
<b>minerals</b> (list some specific minerals)	
<b>fibre</b>	
<b>water</b>	

## Appendix 8

### Assessment

There are two elements to the assessment for this module. The format of each is outlined below:

#### Practical Assessment of Teaching Skills

This assessment will be undertaken by the classroom teacher.\* No weighting has been assigned to this assessment component. **However, you must include the completed pro-forma with your reflective written commentary.** You must also reflect on the comments made by the teacher and indicate how they will inform future teaching practice.

\*See **Page F** for a copy of the pro-forma used for this assessment.

#### Reflective Commentary

Reflective written commentary on experience (maximum number of words 2,000). Please see below for guidelines on completion of the reflective commentary. The marking scheme used to assess your work can also be found below.

**Weighting:** 100%.

**Submission Date:**

No later than 5.00pm on **Friday 14<sup>th</sup> of May 2010.**

This should be submitted to:

The Centre for Medical Education Office  
73 University Road  
Belfast  
BT7 INN

## Guidelines for Completing Reflective Commentary

### Reflective Commentary

The aim of this assignment is to provide you with an opportunity to reflect on the learning opportunities offered during the module.

The commentary should include details about the development of your communication, presentation, computing and IT skills during this special study module.

You should also comment on your perceptions of P7 pupils' knowledge and understanding of physiology and health related issues. Did this differ from your expectations? If so why?

The techniques that you developed to deliver the material should also be discussed. You should comment on how this changed during the semester.

You may find the following framework useful when reflecting on your experience in the classroom:

- did you always deliver the lessons as you had planned; if not why not?
- did you modify your style of delivery as the module progressed? For example, did you present information in a more simplistic manner?
- your observations of the pupils' motivation, enthusiasm. Were pupils more enthusiastic about some topics than others?
- did you find it easier to prepare and deliver material on some topics than others?
- what knowledge and skills have you gained as a result of completing this module?

NB You must also include one lesson plan with your reflective commentary. You will prepare a lesson plan for each topic you deliver in the classroom. Please select one lesson plan and include it as an Appendix.

To ensure that this reflective commentary is an accurate reflection of the work you undertake during the module you should complete the log-book\*\* after each session. You can refer to this book when you are completing your reflective commentary. ***You should also ask the teacher to sign the log book when you have completed each section.***

**\*\*Marks will not be awarded for completion of the log-book, however you should submit it to the Centre for Medical education Office when you are submitting your reflective commentary. The information that you have recorded in the log-book will be used by the module co-ordinators when evaluation the content and format of the module.**

See **Page E** for a copy of the pro-forma used to assess this piece of work.

## Referencing your Work

Use the Vancouver system.

## Plagiarism

Blatant cheating i.e. presenting work prepared completely by someone else and representing it as your own, will result in you receiving no marks for the module.

If you quote the work of another person you must acknowledge them fully by means of a reference in the text (the source should be provided in the reference list). Quotations should be put in quotation marks.

Paraphrasing statements/text of factual knowledge or ideas from published works, lectures or WEB sources is not plagiarism if you reference the original source and the paraphrasing is not too extensive. You will lose marks for excessive paraphrasing. Any diagrams, tables, graphs etc. which have been taken directly from a source or modified from a source must include appropriate details of the author and source, as well as being acknowledged:  
e.g. from Bloggs *et al* 1999 or adapted from Bloggs *et al* 1999.

## Late Submission of Course Work

Students who submit work late will be penalised. Coursework signed in after the published submission deadline will be automatically penalised at the rate of 5% marks for each day late, up to a maximum of 5 working days late, after which a mark of zero will be awarded. NOTE: exemption from late penalties will be the exception rather than the rule (please refer to the Notes for Undergraduate Medical Students Booklet for guidance regarding extenuating circumstances). Application for late submission of coursework should be made using the approved form available from the Faculty Office and submitted to the member(s) of staff designated by the School within 3 days after the deadline for submission of the work.

## Attendance at Classes

Full attendance is expected at all teaching sessions, as is submission of course work and contribution to group work. Students who do not attend all of the scheduled sessions will normally be required to undertake additional work before the module mark will be given to the Examination Board (ref. Calendar Book 1, General Regulations for Degrees of Bachelor of Medicine, Bachelor of Surgery and Bachelor of Obstetrics, point no. 12).

**It is imperative that you attend all of the sessions. If you are unable to attend any sessions please contact Mairead Boohan in advance. If you fail to attend a class and do not have a legitimate explanation for your absence your marks will be referred by the Board of Examiners.**

### **Mobile Telephones**

Mobile telephones and electronic messaging devices must be switched off during all lectures, tutorials, practical classes and clinical teaching.

## Marking Scheme for Reflective Commentary

Reflective commentaries are marked out of **100**.

Candidates must achieve a mark of **fifty** to pass this component of the assessment.

### Guide to Using the Scale

Mark	Comentary
6	Excellent; as for 5 but greater evidence of use of relevant source material and has highlighted some difficulties experienced when applying some of the concepts and ideas.
5	Very good; the portfolio is very well written and presented; candidate has accessed additional source material and integrated material from other modules. Candidate has reflected on the relevance of the module content for his/her own personal development and future professional practice. Provides examples of changes to practice. Use of source materials, personal experiences, incorporation of materials from other modules, inclusion of appropriate references to theory and principles.
4	Good; the candidate has reflected on all of the major topics discussed during the module, there is some evidence of integration across the module; there may be some factual inaccuracies. Discussion may lack focus. The candidate has accessed some source material other than that recommended in the module guide.
3	Average; the candidate demonstrates some evidence of reflection and has made reference to the recommended source material. The portfolio has not addressed the breadth of topics covered in the module. Some information in places about how the knowledge acquired during the module will impact on personal and professional development. There may be a few factual inaccuracies. Discussion may lack focus in some places.
2	Poor; the candidate demonstrates little evidence of reflection and has made insufficient use of the recommended source material. The portfolio may focus on only one or a few topics or aspects of the module. Very little information about how the knowledge acquired during the module will impact on personal and professional development. Significant factual inaccuracies. Discussion lacks focus throughout.
1	Very poor; the candidate has completed a portfolio however the information presented is either not relevant to the module or mere repetition of the factual information presented during the teaching sessions.
0	Missing; the candidate did not submit a portfolio.

## Competences Relevant to Students Participating in the Medics in Primary School (MIPS) programme

<b>Student:</b>	
<b>School:</b>	

Competence: The student is a person who .....	Please Tick as Appropriate		
	Good 3	Fair 2	Poor 1
... shows a willingness to learn			
... can communicate easily and effectively			
... can establish and maintain constructive relationships with children			
... can integrate a wide range of knowledge and skills and apply knowledge and skills appropriately and effectively in practical situations			
... plans and employs a variety of teaching strategies to the topic			
... encourages pupils to develop powers of observation and inquiry			
... captures and maintains pupils' attention, interest and involvement			
... makes appropriate use of the range of available resources			
... seeks advice when necessary			
... consistently displays a professional attitude			
<b>Total (Maximum 30)</b>			

<b>Additional Comments by Teacher (optional)</b>



# Student Teaching & Learning Guide

# Medics in Primary Schools

A Queen's - Sentinus Programme

For information, please contact:

Colin Press - T: 07788 146969 • E: [press.colin@btinternet.com](mailto:press.colin@btinternet.com)

Sentinus - T: 028 9262 7755 • E: [info@sentinus.co.uk](mailto:info@sentinus.co.uk)

Mairead Boohan - T: 028 9097 5068 • E: [m.boohan@qub.ac.uk](mailto:m.boohan@qub.ac.uk)

