



TEACHER NOTES SCIENCE

MODULE

6

TO BE USED IN CONJUNCTION WITH WORKSHEETS 6A TO 6F

Lesson 1: My Body

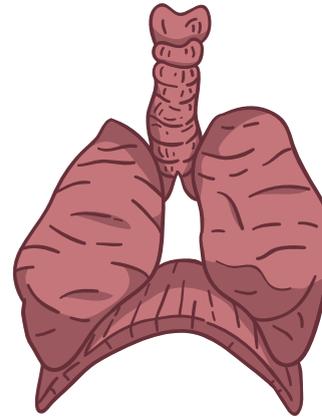
Strand: Living Things.

Strand Unit: Myself.

Aims:

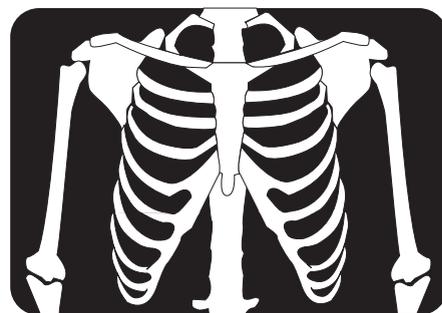
1. To name and identify external and internal parts of the body and their associated functions.
2. To describe the functions of the lungs and the heart.
3. To describe and explain the function of the skeleton.
4. To discuss the function of joints and name the joints we use when playing GAA.

Resources: Worksheet 6A.



Suggested Activities:

1. Play the game 'Body Tag' to revise all of the external body parts; head, neck, shoulders, elbows, knees, wrists, ankles, hands, arms, face, toes, feet, fingers, thumbs, backs etc. The children move freely around the room and when a body part is called out, the children must find a partner and touch the named body part with their partner – for example, knees touching their partner's knees. The last pupils to complete the activity are out. They become the 'spotters' with the teacher for the next round.
2. Have the children make a drawing of where they think their heart is on an outline of the human body and where the lungs are. Discuss with the children the purpose of the heart and lungs. Have the children feel their pulse and clap the beat. Have the children run on the spot and feel their pulse again. Is it faster or slower? Have the children clap the beat now. Tell the children that the normal heart rate is 72 beats per minute. What about their breathing? Did it get faster or slower? What are we inhaling into our lungs when we breathe? Why do we need to breathe faster when we are playing games? How is oxygen carried to all the parts of the body? Tell the children that their heart is approximately the size of their fist. Show the children the correct location of the heart and lungs and have them make any amendments to their initial drawings.
3. Discuss with the children what holds our bodies upright and stops us from being soft and jelly like. What is the skeleton made up of? What is important in our diet for our bones? Look at the food pyramid. How many dairy products should we eat? Make a list of the dairy products we could bring to school for our lunches. Estimate how many bones we have. Discuss what else our skeleton is important for. What parts of the skeleton protect our soft organs such as the brain, the lungs, the spinal cord and the heart? Have the children bend over and feel their backbone. It is made up of 26 bones, each in the shape of a ring. Can the children feel their skull? It protects the brain and forms part of our faces. Can the children feel the bones under their eyes, their jawbone etc. Have the children take a deep breath and feel their rib cage. Ribs come in pairs and most people have 12 pairs of ribs. Discuss what is meant by the word joint. Discuss which bones allow us to bend and twist. These are our joints. Identify the moving joints that allow us to move parts of our body. One type of moving joint is called a hinge joint and it allows movement in one direction only, e.g. elbows, knees. Identify the ball and socket joints that allow us to move our arms and legs in lots of directions i.e. shoulder and hip. Name and label the different parts of the skeleton; the skull, the backbone; the moving joints of the elbow, knee and the ball and socket joints at the shoulder and hip.



6 SCIENCE

GAA Grassroots to National Programme (GNP)

TEACHER NOTES

- Name the body parts, both internal and external, that we use the most when playing GAA. Explain how each body part is important and for which sport. Football: Heart and lungs, skull, knees to run, feet and ankles to kick, hands and first to pass the ball, elbows to allow the arms to move, hands to save the ball (goalkeeper). Camogie/hurling: Heart and lungs, skull, knees for running, hands, elbows and shoulders for striking the sliotar with the hurl, hands for catching the sliotar, knees to bend etc.
- Complete **Worksheet 6A**.
- For detailed information, activities and movie clips on parts of the body go to: www.kidshealth.org/kid/htbw

Lesson 2: The Senses

Strand: Living Things.

Strand Unit: Myself.

Aims:

- To identify and explore the five senses.
- To discuss the role of the senses on the playing field, their role in detecting information about the environment and protecting the body.

Resources: Worksheet 6B.

Suggested Activities:

- Recall with the children the five senses and their functions. Divide the class into five groups and play the memory game for each of the senses – e.g. I went to school this morning and I saw my breakfast. I went to school this morning, I saw my breakfast and my school bag. I went to school this morning and I saw my breakfast, my school bag and my mammy etc.
- Have the children, working in groups, play a matching game using **Worksheet 6B**. All of the pictures are cut out and turned upside down. (The children can work in groups to complete **Worksheet 6B**. The children should draw in something that they see, hear, touch, etc. on match day. For example, burger = taste or smell, scoreboard = see, hurl = touch, football = touch, etc..)
- Have the children explore each of the senses. Have the children play 'I spy' in the classroom or in the outdoor environment. Have the children list a variety of things they see on match day.
- Have the children listen to a variety of sounds and identify the origin of each sound. Sounds associated with the match day could be used. Have the children list sounds associated with match days. Go to www.findsounds.com to avail of a variety of sounds.
- Have the children smell a variety of objects concealed in darkened containers and guess what the smell is. Have the children list a variety of smells they experience on match days. This may include hot dogs, burgers, oranges, etc.
- Have the children put their hand in a feely bag and describe the objects. Have the children name the objects. Have the children list the objects they would touch on match day.
- Have the children identify a variety of fruits using only their sense of taste. Have the children list things that they might taste on match day.
- Have the children make their own 'Match Day Sense Book'.
- Discuss the role of the senses in protecting us. Our sense of sight prevents us from walking into things etc. Our sense of hearing allows us to hear if there is traffic, someone shouting danger, etc. Have the children close their eyes and imagine that they are on the playing field. In pairs, discuss



how their senses will help them. Will they use all of their senses on the playing field? Which will they use most often? What do they need to see, hear and touch? What will they taste at half time? Is their sense of smell used in playing the game? Record what they will see/touch/hear/taste/smell on the field. Use **Worksheet 6B**.

Lesson 3: How Do We See?

Strand: Energy And Forces

Strand Unit: Light.

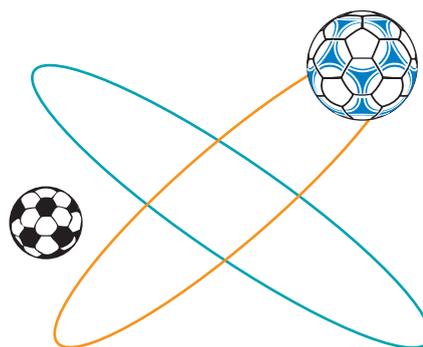
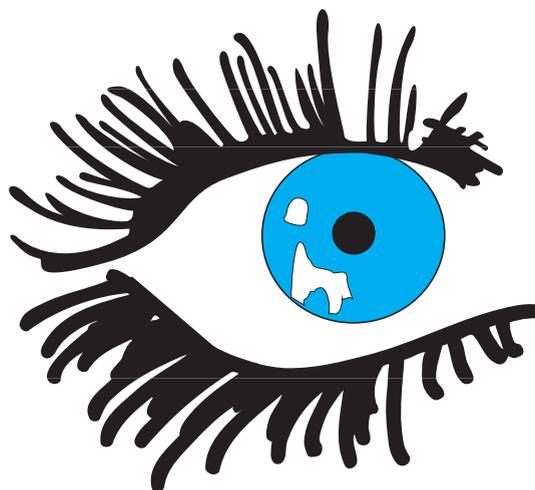
Aims:

1. To recognise that light comes from different sources.
2. To engage in experiments to recognise that light is needed in order to see.
3. To associate the sense of seeing and the presence of light in order to see on the playing field.

Resources: Worksheet 6C.

Suggested Activities:

1. Brainstorm all of the different sources of light. For example; the sun, the moon, streetlights, floodlights, torches, candles, computer screens (when turned on) light bulbs, lamps, fire etc. Discuss what source of light we use when we are playing GAA games. Is it streetlights, floodlights, the sun or moon. Circle the sources of light on the activity sheet.
2. Go to www.ngfcymru.org.uk/vtc/light/eng/Introduction/default.htm for interactive whiteboard activity.
3. Create a darkroom in the classroom. This can be done by draping a blanket over a table or chairs. No light must be able to enter the darkroom. Now hide a selection of coloured objects in the darkroom. Make sure you use at least one silvery/shiny object. Have a duplicate set of objects outside the dark room. Invite the pupils to predict which objects they will be able to see in the darkroom. Allow the children into the darkroom. Question the children as to what they can see? What objects can they find? Now give them some torches and let them find the objects. Have a plenary session discussing their original predictions and the results.
4. Discuss with the children how we see objects. What part of the body do we use? Do we need anything else to see? Have the children work in groups. Each group is provided with a shoebox. Objects are placed in the shoebox and the lid is placed on top. A small hole is made in the end of the shoebox. The children take turns looking into the hole to see if they can see the objects. Engage the children in discussion as to why the objects cannot be seen even though we are looking at them. When we wake up in the middle of the night can we see? Why not? What do we do in order to see? Discuss with the children what we could do with the shoebox so that we can see what is inside the box. Make a hole in the top of the box. What light source will get through now? (The children can shine a torch through here if there is insufficient natural light. Have the children look through the original hole. Can they see the objects now? So in order to see, we need our eyes but we also need a source of light.
5. Discuss with the children how we see the sliotar/football on the playing field? How do we see the handball in the handball alley? What light sources are present? If we were playing at night, what light source could be used?



To observe a lesson on teaching some of the above activities to the class go to www.teachers.tv/video/2486



6 SCIENCE

GAA Grassroots to National Programme (GNP)

TEACHER NOTES

Lesson 4: The Bigger Bounce!

Strand: Energy And Forces.

Strand Unit: Forces.

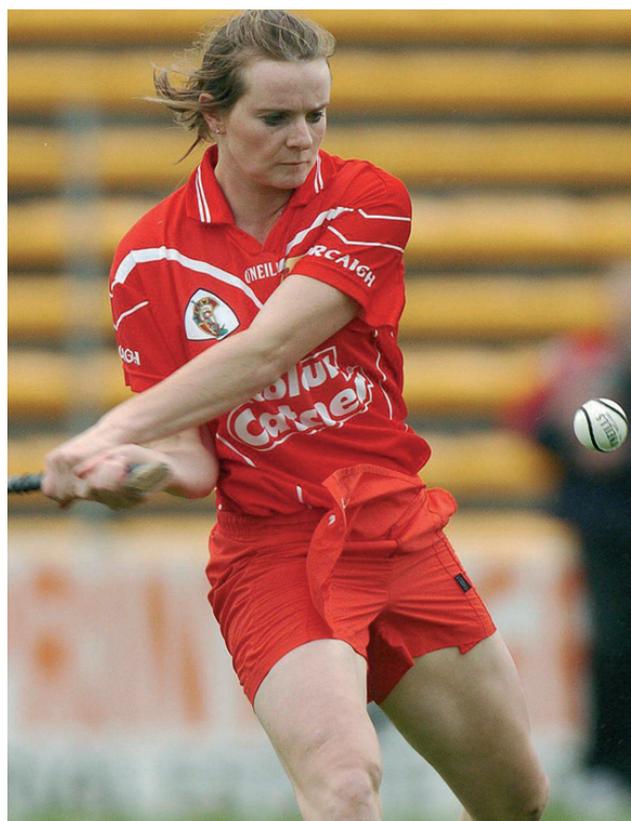
Aims:

1. To identify that a force is a push or a pull and discuss the forces used on the playing field.
2. To explore how objects can be moved by pushing and pulling.
3. To observe and investigate the bounce of a ball on different surfaces.
4. To observe and investigate the movement of a sliotar/football on various surfaces, rough and smooth.

Resources: Worksheet 6D.

Suggested Activities:

1. Discuss what is meant by a force. A force is a push or a pull. Some things need to be pushed. Can you think of things in our lives that we push? For example, a trolley, someone on a swing, a door etc. Some things need to be pulled. Can you think of some things that need to be pulled? A door, a blind, a rope etc. Go to www.ngflcymru.org.uk/vtc/push_pull/eng/Introduction/default.htm for an interactive introduction to pushing and pulling.
2. Discuss with the children what pushes and pulls we use when playing GAA games. What push do we use in football? Players push the ball with their fist when hand-passing, or push the ball with their leg when they kick. Camogie? Hurling? Players push the sliotar by striking it with the hurl. What pull do we use? The hurley is pulled back in camogie and hurling to strike the ball. The bat is pulled back in rounders, while the ball is pushed with the bat. The players' hands are used to push the ball in handball etc.
3. Experiment by using different forces of pushes and pulls to move the football/sliotar/handball.
4. Discuss with the children what is meant by the concept of fair testing. Everything must be the same except the variable that is being tested. Conduct a fair test to investigate what surface the football will bounce higher on. Discuss with the children what must be kept constant. This includes the type of ball to be used, the material the ball is made from, the size of the ball, the force at which the ball is dropped, the height from which the ball is dropped, and the time at which the ball is dropped. Four surfaces will be provided. The only variable is the surface that the ball will be dropped onto. The four surfaces are carpet, grass, tarmac and tiles. Divide the children into groups. Have the children predict which surface will produce the highest bounce. Have four children hold the ball at the same height and release it at the same time using no extra force. Have the other children in the group identify through observation which surface produces the highest bounce.
Record and discuss the results.



The force which ensures that the same size ball with the same shape drops at the same speed is called gravity. Go to www.calmast.ie/index.php?option=com_content&task=view&id=62&Itemid=110 or www.cul4kidz.com to see the cul4kidz science section.



Lesson 5: Time For An Ice Cold Drink

Strand: Materials.

Strand Unit: Materials And Change.

Aims:

1. To explore what is meant by a thermal insulator.
2. To discuss ways in which liquids can be kept cold.
3. To conduct a fair test using ice cubes to assess the suitability of a selection of materials as thermal insulators.

Resources: Worksheet 6E.

Suggested Activities:

1. Discuss with the children why it is sometimes important to keep things warm or to keep things cold. Brainstorm ways in which we keep things warm and also how we keep things cold. Have the children think of how they feel after playing games. What might help them to cool down? Discuss with the children how we could keep our drinks/oranges/ice cold during the game? Keep them in the shade, put them in a cool box, keep them in a refrigerator etc.
2. Experiment with the children to identify what materials would be good to keep something cold. Discuss with the children what is meant by fair testing. Everything in the experiment must be the same except the one variable that we are testing; in this case the material that is most suited to keeping something cold. (Read the story 'The Snowman's Coat' by Brenda and Stuart Naylor) Have the children work in groups. Each group is provided with four pieces of material. The four materials are newspaper, tinfoil, cotton wool and fabric. All pieces of material are of the same size. Each group is provided with an ice cube of equal size. (Freezing ice in plastic cups of equal size might be better for the younger age group). Wrap each ice block in a different type of material. Place on plastic plates. Also put an unwrapped ice cube on a plastic plate. Predict which ice cube will be the first to melt? Which ice cube will be the last to melt? Which material will be the best at keeping the heat away from the ice? Have the children observe and record the results. The material that keeps the heat away from the ice for longest is the best 'thermal insulator'. Have the children record the experiment on **Worksheet 6E**.



To see an online experiment on thermal insulators go to www.fi.edu/pieces/hiley/thermal_insulator.htm



6 SCIENCE

GAA Grassroots to National Programme (GNP)

TEACHER NOTES

Lesson 6: Soak It Up!

Strand: Materials.

Strand Unit: Properties And Characteristics Of Materials.

Aims:

1. To discuss the properties and characteristics of materials used in the design of jerseys.
2. To explain what is meant by the term absorbent.
3. To design a fair test to see what material is most absorbent.

Resources: Worksheet 6F.

Suggested Activities:

1. Discuss with the children the texture and "feel" of GAA jerseys. Discuss the importance of the fabric used in their design? Should it be warm/cool/stretchable/waterproof? Should the jerseys have good elasticity? Why? Why not?
2. Discuss with the children what is meant by the terms absorbent. Brainstorm items in our home that would be absorbent. These could include paper towels, towels, cloths in the kitchen, sponges etc.
3. Revise the meaning of a 'fair test' with the pupils. Discuss with the children how to conduct a fair test to find out which material would be most suitable when making a jersey for teddy. What is the variable? (The material that we are using.) What should be the same? (The size of the material, the amount of water drops put on each piece of material, the size of the jam jars/plastic beakers.) Set up four identical jam jars/plastic beakers. Attach four equally-sized pieces of material to the containers. The materials to be used are newspaper, a jay cloth, clingfilm and kitchen paper. These materials are placed over the top of each container and secured with an elastic band. Predict which material will absorb the most water. Drop the same amount of water drops, for example five drop onto each piece of material. Observe which material soaks up the most water. Record how many drops of water the material absorbs. If no water is allowed through then the material is waterproof and would not be useful as a jersey. If all of the water falls into the beaker the material is not absorbent. The material that soaks up the most water and leaves the least amount of water in the beaker is the most absorbent material. Record the results. Decide which material would be the best absorber and hence the best material for teddy's jersey.
4. A similar fair test could be conducted using a variety of fabrics; for example nylon, cotton, silk and wool.

