

KS4 Bone, muscle and joints

**1. Details of the teacher**

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| Name: | Date: | Time: | Class: |

**2. Topic overview**

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| **Suggested timing for session (excluding optional activities) is 45 minutes.**  **Teaching staff notes:**  **Ensure content will not affect any students adversely, may contain images of injury/ bleeding**  Delivery of this session must ensure that all students maintain the safety of themselves and others before administering any first aid. Students must be able to identify when a casualty may require an assessment and first aid treatment after sustaining an injury to the musculoskeletal system.  Actions within the topic will include looking after a casualty and reassuring them; seeking medical help if required and administration of basic first aid skills.  Before delivering any first aid skills, teachers must feel confident that they have the relevant knowledge and competency to safely teach techniques.  It is advised that students are taught basic life support skills and bleeding and shock topics prior to this session, as a casualty with a severe injury could also go into shock and basic life support may be the appropriate action required. (See recommended KS4 first aid pathway)  **Session timings**: timings for session are generally advised as one hour in duration, however delivery time will vary according to group size and previous knowledge of learners.  Optional activities are excluded from these timings and may be used within session to extend duration or as a separate learning session to recap or extend learning. Approximate timing guides are provided on each optional activity to assist with planning and preparation of sessions.  **For this session learning materials will be:**   * PowerPoint presentation * A4 Paper * Pens * Coloured pens for pupils to amend own work * See optional activities for specific resources required for each activity |

**3. Key words**

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| * **tendon** * **ligament** * **strain** * **sprain** | * **dislocation** * **open fracture** * **closed fracture** * **swelling** |

**4. Learning outcomes**

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| **By the end of the lesson, students will be able to:**   * Identify the difference between a bone, muscle or joint injury * Give first aid to a casualty who has a bone muscle or joint injury * Recognise when to call for help for a casualty who has a bone muscle or joint injury |

**5. Details of activities and resources required**

Note: Should you have less than an hour available, you may choose to select key activities from the lesson plan. As a minimum, students should complete the First Aid Steps activity at the start and end of the lesson to monitor progress and have the chance to complete at least one ‘Your Turn’ activity with a video to provide guidance on how to perform First Aid techniques.”

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| **Introduction** | |
| **Activity** | **Resources required** |
| * Use accompanying PowerPoint presentation | Bone, muscle and joints |
| **First aid steps: (5 min)**   * Ask the students to use their existing first aid knowledge to see if they can complete any of the missing steps. Students should write in the boxes any actions that they feel would fit into a sequence of events that would allow them to help someone who has a fractured limb. * At end of session you can revisit this and see if students can make any amends or add further information (using a different colour pen | Slide 1 |
| * Explain the learning outcomes of the session * Establish ground rules for the session, using additional advice sheet provided | Slide 4 |

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| **Main Input** | |
| **Activity** | **Resources required** |
| **The musculoskeletal system: (5 min)**   * Advise that the skeleton is a framework that protects our bodies and offers support. Ask students to determine the missing word (ligaments) * Ask if students can locate joints in their bodies and identify what type of joint, they are: hinge, ball and socket etc. | Slide 5 |
| **The musculoskeletal system: (10 min)**   * Use PowerPoint to determine if students can identify any bones in the human body, answers follow on next slide * Repeat same exercise for muscles of the human body * Alternatively, you can set half the group task with bones and the other half task with muscles * Use worksheet A 45 to create small group task of labelling the bones and muscles given, use research to check answers | Slides 6-10 |
| **Broken bones: (5 min)**   * Use the slide to explain the signs and symptoms of broken bones. Students to remember that if they suspect a casualty has a broken bone they should know how to act and when to call for help * This may be an appropriate time to complete the draw and recognise optional activity on worksheet A47 (10 mins) * Explain to the class that there are different types of fractures. Look at the diagram and ask students to consider that blood loss will vary, amount of injury may vary and also the risk of infection depending on type of fracture | Slides 11-12 |
| **Sprains and strains: (5 min)**   * Use the slides to explain the difference between a sprain and a strain. Students should know how to recognise the difference between them and know how to act accordingly * Emphasise that sprains are connected to ligaments and strains connected to muscles or tendons. Remember, sTrain = Tendon. * Students should be able to spot the symptoms of a sprain or strain and understand why it is different to a fracture | Slides 13-15 |
| **Video: (5 min)**   * Students to watch the video and have discussion on content when finished * What content from the video can they link to knowledge gained in session so far? | Slide 16 |
| **Your turn: (15 min)**   * Print out your turn sheets and give students a scenario to manage and administer first aid skills * The teacher should demonstrate the key steps to deliver first aid to a casualty that has a fracture, sprain or strain. Use the key steps to guide your actions or alternatively let the students direct your actions as you follow their instructions * Use key steps to simulate looking after a casualty. Ensure that they remember to firstly make the area safe by removing any hazards to themselves or others; reassure the casualty and use decision making skills and rationale to decide if their casualty needs to seek medical attention. Remember if the casualty became unresponsive at any point then a primary survey must be conducted, if unresponsive and not breathing normally, then CPR must be commenced straight away. * Each of the key steps can be ticked off on a printout of the sheet to show when competent. * Teacher to observe and feedback to students. As an option, the student could use peer assessment and score their partners * Scenario cards are available which the teacher can use to make the practical activity relevant in a certain context for students. | Slides 17-18 |
| **Types of injury: (5 min)**   * Consider printing the activity sheet as a handout to complete individually * Students to link the injury to the category bone, muscle or joint * You can add and extend this activity. This can be a sorting or flip chart exercise in addition to the presentation | Slides 19-20 |
| **Casualty Care:**   * This slide offers an opportunity for students to discuss how casualty care skills link to this topic. This allows for contrast and comparison against other topics, whilst also showing how topics are linked. | Slide 22 |
| **Check my learning: (5 min)**   * Revisit learning outcomes and check student’s confidence and competence regarding management of a casualty who has an injury to a bone, muscle or joint * Students could revisit starter activity to assess progress made against baseline assessment. | Slide 22-23 |

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| **Optional Activity** | |
| **Activity** | **Resources required** |
| **The musculoskeletal system: (30 min)**   * Optional activity A45 to cut out skeleton or make their own. Students can label themselves or cut out the labels provided. Working in small groups the students can try to identify bones and muscle groups, slides on PowerPoint can help with this activity * Students should learn basic anatomy by extending activity and sorting/labelling/researching different body parts and use activity to gain an understanding of how the human body forms * S&C can be for the class to do this without the assistance of the slides for guidance | Slide 10/26 |
| **Recognise and draw: (20 min)**   * Students to demonstrate what they have learnt about different types of fractures. They must draw an open/closed fracture and write down key signs/symptoms for both | Slide 12/27 |
| **Your turn complete the key steps:**   * Print out the blank your turn sheets and give students the opportunity to complete the key steps from knowledge gained within the session * This could be used as a recap activity post session or homework. Teacher to observe and feedback to students. As an option, the student could use peer assessment and score their partners | Slides 28-29 |

**6. Check learning**

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| * Use slide 22 ensure that leaning outcomes of the session have been met * Teacher to ask open questions about safety * Use key words given in session plan. Can students put these words into sentences? * What have you learned today? * Score yourself - how confident would you now be if you came across someone who was injured? * Revisit your starter activity. Using a different colour pen, can students now complete this task more accurately than they could before? |

**7. Details of assessment for learning**

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| * Shared learning objectives * Peer assessment * Written feedback | * Questions/answers * Self-assessment * Reflection/evaluation | * Extended questions/answers * Oral feedback * Group work |

**8. Teacher notes**

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| **Use this space for differentiation notes, the role of any classroom support, evaluation notes, etc.** |

**9. Curriculum links**

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