Question: How can Luis Suarez run on a football pitch and last for 90 minutes?

National Curriculum Link

KS2 Science: Y3 Animals, including humans KS2 Science Working Scientifically

IB Learner Profile Links

Inquirers – Nurture skills for research and curiosity

Knowledgeable – Develop conceptual understanding and engage with issues and ideas

Caring - Show empathy, understanding, compassion and respect for all life

<u> Prior Skills – Y2</u>	<u>New Skills – Y3</u>	<u>Future Skills – Y4</u>
 Understand that all animals, including humans, have offspring, which grow into adults; Find out about and describe the basic needs of animals, including humans for survival (water, food and air); Describe the lifecycle of some living things (e.g. egg, chick, chicken) Describe the importance for humans of exercise, eating the right amount of different types of food, and hygiene. Ask simple questions and recognise that they can be answered in different ways Suggest how to find things out Gather and record data to help answer questions Complete a simple table or chart to show information Organise things into groups and find simple patterns Use text, diagrams, pictures, charts, tables to record their observations 	 Explain the importance of a nutritionally balanced diet. Describe how nutrients, water and oxygen are transported within animals and humans Identify that animals, including humans, cannot make their own food: they get nutrition from what they eat. Identify that humans and some other animals have skeletons and muscles for support, protection and movement. Describe and explain the skeletal system of a human. Describe and explain the muscular system of a human. Make and record a prediction before testing Measure using different equipment and units of measure Record their observations in different ways (labelled diagrams, charts etc.) Describe what they have found and observed using scientific words Make accurate measurements using standard units Explain what they have found out and use their measure it helps to answer their question 	 Identify and name the basic parts of the human digestive system Describe the function of the organs of the human digestive system Identify the different types of teeth in humans and their simple functions Compare the teeth of herbivores and carnivores Explain what a simple food chain shows Construct and interpret a variety of food chains, identifying producers, predators and prey Take measurements using different equipment and units of measure and record what they have found in a range of ways Explain their findings in different ways (display, presentation, writing) Make a prediction based on something they have found out and apply science knowledge for further investigating. Make accurate measurements using standard units Plan and carry out a fair test Record and present what they have found using scientific language, drawings, labeled diagrams, bar charts and tables.

 Use results to draw simple conclusions 	Use results to draw simple conclusions and suggest improvements
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Knowledge, Skills and Understanding for topic area

- Explain the importance of a nutritionally balanced diet.
- Describe how nutrients, water and oxygen are transported within animals and humans
- Identify that animals, including humans, cannot make their own food: they get nutrition from what they eat.
- Identify that humans and some other animals have skeletons and muscles for support, protection and movement.
- Describe and explain the skeletal system of a human.
- Describe and explain the muscular system of a human.

Knowledge, Skills and Understanding for Working Scientifically

- Make and record a prediction before testing
- Measure using different equipment and units of measure
- Record their observations in different ways (labelled diagrams, charts etc.)
- Describe what they have found and observed using scientific words
- Make accurate measurements using standard units
- Explain what they have found out and use their measurements to say whether it helps to answer their question
- Use results to draw simple conclusions

Challenge

- Can they explain how the muscular and skeletal systems work together to create movement?
- Explain how people, weather and the environment can affect living things?
- Explain how certain living things depend on one another to survive?
- Can they use results to draw simple conclusions, suggest improvements and raise further questions for further investigating?

Resources

- one or more of model skeleton
- Human skeleton jigsaw
- Human skeleton
- Hand help magnifiers
- X rays (human and animal)
- Collection of real bones from different animals eg chicken, fish, lamb, rabbit (clear of all muscle tissue and sterilised)
- CD-ROM, video or other secondary sources to provide pictures of skeletons
- models illustrating how muscles work
- X-rays of bones provide additional interest for children (human and animal)

Suggested Quality Texts

Non fiction: Horrible Science books

Fiction: Running Wild by Michael Morpurgo Funnybones by Janet and Allan Ahlberg

Website/Apps

The zone materials box - www.getinthezone.org.uk Practical science ideas exploring the body in motion (links to teacher lessons quide in school for ideas)

Bonnie – The skeleton App Game and interactive questions The Human Body by Tinybop App in 50 languages, voice recording to explore skeleton.

Extended Writing Opportunities

Explanation texts - explain how the food is transported by the blood to the various muscles in the body. Non chronological report about the human skeleton

Numeracy Skills

Use timers to time themselves running; create graphs to make comparisons with Usain Bolt's time. Measuring length of some bones in the human body e.g. femur, tarsels, humerus etc. Use standard units of measure. Record data in tables, draw simple bar charts or plotting points on a simple line graph.

Wow starter/experience ideas

See how far each child can run in the 9.68 secs which is the world record for 100m. Compare with Usain Bolt. Hospital visit to X-Ray department – Liverpool University School of Medicine

Athlete to come into school, E.g. Footballer Jack Dunn

Cross Curricular Links/ enquiry time activities:

Art: Create different sketches of the position of a body as it moves from crouch to upright when running. Think of proportions. Think of Giacometti; Thomas Heatherwick

Make an X-ray. Using tracing paper and white wax crayons, make a skeleton picture.

Remember, only the bones must be drawn (look at real X-rays and real bones first). Wash over with thin black ink or paint. Display on the windows. Are the bones broken? Write the names of the patient, and the doctor and the date.

Close observational drawings of bones—skulls are particularly good. This should give an opportunity for shading don't leave the eye holes blank. Display on black paper, or do drawings with chalk and display on white. Using art straws, polystyrene chips, pieces of paper, make a skeleton collage.

PE: Create dance movements, from ballet to street dance, which reflect the body's ability to balance and move between different positions.