
Session type: Workshop

Duration: 60 minutes

Key Stage: KS3

Main Curriculum Link:

- Science: Biology – Structure and function of living organisms

Secondary Curriculum Links:

- Science: Working scientifically
- Science: Biology – Material cycles and energy
- Science: Biology – Interactions and interdependencies
- Science: Biology – Genes and evolution

Overview

A close and detailed look at the internal anatomy of a fish through a teacher lead dissection. This workshop gives an opportunity to explore what makes a fish a fish, and how they are different from other animals – including humans.

This scientific workshop provides a hands-on memorable experience, getting the students fully immersed in the structure and function of a fish!

National Curriculum Links

Key Stage 3 Science: Biology – Structure and function of living organisms

- The skeletal and muscular systems
 - The structure and functions of the human skeleton, to include support, protection, movement and making blood cells
 - Biomechanics – the interaction between skeleton and muscles
 - The functions of muscles
- Nutrition and digestion
 - The tissues and organs of the human digestive system, including adaptations to function and how the digestive system digests food (enzymes simply as biological catalysts)
 - Content of a healthy human diet: carbohydrates, lipids (fats and oils), proteins, vitamins, minerals, dietary fibre and water, and why each is needed

Key Stage 3 Science: Working scientifically

- Scientific attitudes
 - Pay attention to objectivity and concern for accuracy, precision, repeatability and reproducibility
 - Evaluate risks
- Experimental skills and investigations
 - Use appropriate techniques, apparatus, and materials during fieldwork and laboratory work, paying attention to health and safety

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Key Stage 3 Science: Biology – Material cycles and energy

- Cellular respiration
 - Aerobic and anaerobic respiration in living organisms

Key Stage 3 Science: Biology – Interactions and interdependencies

- Relationships in an ecosystem
 - How organisms affect, and are affected by, their environment, including the accumulation of toxic materials

Key Stage 3 Science: Biology – Genetics and evolution

- Inheritance, chromosomes, DNA and genes
 - Differences between species

Learning Outcomes

After this session, the groups should be able to:

- Work scientifically to carry out the process of a dissection
- Select appropriate tools to best investigate the internal anatomy of an aquatic animal
- Identify the key features of a fish, determining the main differences in comparison to other vertebrate groups
- Understand the internal anatomy of a fish; identifying different organs, showing knowledge of different tissues and their function
- Understand the respiration process of a fish; describing how the gills work, and referencing aerobic and anaerobic respiration
- Understand the fish's digestive system
- Discuss the problems that can arise from insufficient nutrition, and why fish may encounter problems in their environment in relation to food
- To show understanding of pollutants in the marine environment causing problems for all aquatic life

Pre-Visit Suggestions

- Recap classification of invertebrates and vertebrates, recognizing all the vertebrate groups
- Research different marine habitats, and identify key adaptations that fish need to survive in those habitats
- Research relationships between species that live in the ocean, identifying key ocean food chains

Post-Visit Suggestions

- Compare the anatomy of a fish to the other vertebrate groups, identifying key adaptations within each group; use detailed scientific diagrams to show these differences
- Identify the main differences between fish and marine mammals, and identify how marine mammals have adapted to survive in the marine environment
- Have a structured discussion with your class about the ethical and moral implications of dissection, and how it may differ for different groups of animals

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