

NC Purpose of Study

A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.

Intent	Implementation	Impact
At Broadway Junior School we believe that a high quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational 'Big Ideas', pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes. Science in our school is about developing children's ideas and ways of working that enable them to make sense of the world in which they live through investigation, as well as using and applying process skills. The staff here ensure that all children are exposed to high quality teaching and learning experiences, which allow children to explore their outdoor environment and locality, thus developing their scientific enquiry and investigative skills. They are immersed in scientific vocabulary, which aids children's knowledge and understanding not only of the topic they are studying, but of the world around them. We intend to provide all children regardless of ethnic origin, gender, class, aptitude or disability, with a broad and balanced science curriculum.	Teachers create a positive attitude to science learning within their classrooms and reinforce an expectation that all children are capable of achieving high standards in science. Our whole school approach to the teaching and learning of science involves the following Science will be taught in planned and arranged blocks by the class teacher, to have a subject specific approach. This is a strategy to enable the achievement of a greater depth of knowledge. Through our planning, we involve problem solving opportunities that allow children to find out for themselves. Children are encouraged to ask their own questions and be given opportunities to use their scientific skills and research to discover the answers. This curiosity is celebrated within the classroom. Planning involves teachers creating engaging lessons, often involving high-quality resources to aid understanding of conceptual knowledge. Teachers use precise questioning in class to test conceptual knowledge and skills, and assess children regularly to identify those children with gaps in learning, so that all children keep up. Teachers build upon the learning and skill development of the previous years. As the children's knowledge and understanding increases, and they become more proficient in selecting, using scientific equipment, collating and interpreting results, they become increasingly confident in their growing ability to come to conclusions based on real evidence. Working Scientifically skills are embedded into lessons to ensure these skills are being developed throughout the children's school career and new vocabulary and challenging concepts are introduced through direct teaching. This is developed through the years, in-keeping with the topics.	The impact and measure of this is to ensure children not only acquire the appropriate age related knowledge linked to the science curriculum, but also skills which equip them to progress from their starting points, and within their everyday lives. All children will have: - A wider variety of skills linked to both scientific knowledge and understanding, and scientific enquiry/investigative skills - A richer vocabulary which will enable to articulate their understanding of taught concepts - High aspirations, which will see them through to further study, work and a successful adult life.

Key Vocabulary

Incisors, canines, molars, enamel, decay, plaque, sugar, hygiene, mouth, oesophagus, stomach, intestines, Saliva, enzymes, nutrients, waste, Digestion, absorption, waste producer, consumer, predator, prey

Knowledge	Skills
By the end of the unit, pupils will know: - The names and functions of the different types of human teeth: incisors, canines, and molars. - That tooth decay is caused by acids from bacteria feeding on sugars, and how good hygiene can prevent it. - The main organs of the human digestive system (mouth, oesophagus, stomach, small and large intestines). - The functions of these organs and how food is broken down into nutrients and waste. - The sequence of the digestive process, from eating to excretion. - The structure of a simple food chain and the meanings of producer, consumer, predator, and prey. That nutrients are absorbed into the body to provide energy and growth.	By the end of the unit, pupils will be able to: Observe and describe the appearance and function of different teeth. Plan and carry out simple investigations (e.g., the effect of sugar on tooth decay using eggshells). Label diagrams of the digestive system accurately. Sequence and explain the stages of digestion using correct scientific vocabulary. Model and demonstrate the digestive process using practical materials (e.g., tights and food mixtures). Construct and interpret food chains, correctly identifying producers, consumers, predators, and prey. Communicate findings through drawings, diagrams, labels, oral explanations, and written accounts. Use scientific vocabulary appropriately in explanations and discussions

Enrichment Opportunities

Link to English – Explanation
Link to PSHE – Looking after our teeth

Learning Objectives/End Points

Pupils will be able to:

- Describe the simple functions of the basic parts of the digestive system in humans.
- Identify the different types of teeth in humans and their simple functions.
- Construct and interpret a variety of food chains, identifying producers, predators, and prey.

Key Questions/Learning Objectives/End Points

Teeth	Looking after our teeth	Organs of the digestive system	Functions of digestive organs	Model digestive system (practical)	Food chains
Identify and describe types and functions of human teeth. Observe model skulls, draw and label mouth diagram, teeth sorting activity.	Explain how to care for teeth and understand effects of decay, Eggshell in cola investigation; brushing demo; results chart	Identify parts of the digestive system Label diagrams, organ location activity (life-size outline). Focussed Assessments\Year 4\Animals including humans\Y4eg-Human-digestion (1).pdf	Describe functions of digestive organs. Sequencing activity, matching functions to organs. Focussed Assessments\Year 4\Animals including humans\Y4eg Animals Digestion diagrams (1).pdf	Demonstrate how the digestive system works. Practical: banana, biscuits, orange juice, tights to simulate digestion.	Construct and interpret food chains. Build food chains; link with local habitats.
Starter: Whole-class discussion — what do we already know about teeth? Why do we have them? Show different animal teeth and ask pupils to guess what they eat. Main: - Examine models or pictures of human teeth. - Use mirrors to look at our own teeth — count and identify types (incisors, canines, molars). Make teeth out of play-doh - Sort and label teeth by shape and function (biting, tearing, grinding).	Starter: Recap different teeth and their functions. Show a sugary snack and ask, "What do you think happens to your teeth if you eat lots of these?" Main: - Demonstrate how sugar affects teeth using the eggshell investigation (cola, vinegar, water). - Predict what will happen to each eggshell. - Record observations over time in a results table. - Discuss importance of brushing, diet, and dental care.	Starter: Quick recap: "What happens to food after we chew it?" Discuss and collect ideas on the board. Main: - Watch a short animation or video clip explaining the digestive system. - Use organ name cards to place and label parts of the digestive system on a life-size body outline. - Identify each organ and its role briefly. - Pupils complete a diagram of	Starter: Recap the digestive organs from last lesson — can pupils name and locate them? Main: - Card sort: Match organ names to their functions. - Sequence activity — what happens to a sandwich as it travels through the body? - Create a flowchart or comic strip showing digestion in order. - Discuss how the body absorbs nutrients and removes waste.	Starter: Recap: "What happens to food in each part of the digestive system?" Introduce the idea of modelling digestion. Main: - Use banana/biscuit (food), orange juice (acid), plastic bag (stomach), tights (intestines), and cup (mouth). - Work through the steps of digestion — mash, mix, squeeze, and extract "nutrients." - Discuss what each part represents and what's happening to the food.	Starter: Ask: "Where does the food in our digestive system originally come from?" Introduce concept of food chains with examples. Main: - Use image cards to build simple food chains (plant → rabbit → fox). - Identify producers, consumers, predators, and prey. - Create posters or digital versions of different food chains. - Explore what happens if one

• Compare human and animal teeth — link to diet (herbivore, carnivore, omnivore). Plenary: Label a diagram of the mouth. Discuss what might happen if we didn't have certain teeth.	• Create posters or leaflets promoting healthy teeth. Safety Focus: Handle liquids safely. Wash hands after investigation. Don't taste or touch the liquids.	the digestive system in their books. Plenary: Human body quiz — pupils match the organ to its correct job (mouth, stomach, intestines, etc.).	Plenary: Children act out the journey of food — each pupil represents an organ and says what they do!	• Draw and label their model in books. Safety Focus: Handle food and liquids hygienically. Wash hands thoroughly before and after the activity. Plenary: Review what each organ does — pupils explain the process using key vocabulary	part of the chain disappears (balance in nature). Plenary: Quick-fire quiz — pupils show thumbs up/down for true or false statements about food chains. Extension: Introduce idea of food webs or link to local habitats
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Careers

Linking Curriculum Learning to Careers

Discuss how the skills developed in this unit are used in a range of careers, including:

- Doctor
- Nurse
- Dentist
- Dental Nurse
- Dental Hygienist
- Pharmacist
- Physiotherapist
- Biomedical Scientist
- Medical Laboratory Technician
- Surgeon
- Paramedic
- Occupational Therapist
- Vet
- Veterinary Nurse
- Animal Care Assistant
- Zoologist
- Ecologist
- Wildlife Conservationist
- Marine Biologist
- Animal Behaviourist
- Zookeeper
- Wildlife Ranger
- Animal Nutritionist

Transferable skills such as Curiosity Observation Investigation Problem solving Teamwork Communication Research Organisation Attention to detail Classification Data handling Critical thinking Decision making Creativity Resilience Responsibility Confidence

Learning from Career and Labour Market Information

- Introduce pupils to local and wider careers connected to health, medicine, dentistry, nutrition, animal care, environmental science and food. Discuss where pupils might encounter these jobs in their local community.

Addressing the Needs of Each Pupil

- Provide opportunities for all pupils to explore careers through practical investigations, discussion, role play, visual resources and hands-on activities. Celebrate a range of skills, including observation, communication, practical problem-solving and caring for others.

Linking Curriculum Learning to Careers

Explicitly link learning about teeth to dentists and dental nurses; digestion and organs to doctors, nurses and biomedical scientists; nutrition to dietitians and nutritionists; animals and food chains to vets, zoologists, ecologists and wildlife conservationists.

Encounters with Employers and Employees

- Invite a dentist, dental nurse, doctor, nurse, dietitian, vet or animal care professional to speak to pupils. Pupils could prepare questions about their role, equipment, qualifications, workplace and the Science knowledge they use.

Experiences of Workplaces

- Explore photographs, videos and virtual tours of a dental surgery, hospital, veterinary practice, wildlife centre, laboratory or food science workplace. Identify the different people who work together in each setting.