

Switched on Science Year 4

Autumn 1 - Unit 1 - What's that sound?

| Week | Unit | National Curriculum strand | Activity Title | Subject knowledge Learning outcomes | Working scientifically learning outcomes | Page link | Personal Notes |
|------|-----------------------|----------------------------|-----------------------|---|---|-----------|----------------|
| 1 | 1.1 What a racket! | Sound | Let's make a sound | Identify how sounds are made, associating them with something vibrating | Make systematic and careful observations, record findings, identify differences, similarities or changes. | 8-9 | |
| 2 | 1.1 What a racket! | Sound | Let's make it louder! | Find patterns between the volume of a sound and the strength of the vibrations that produced it | Carry out simple practical enquiries, comparative and fair tests, take systematic and careful observations, record findings, identify differences, similarities or changes. | 10-11 | |

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| 3 | 1.2 Turn it up and down | Sound | Can you hear it? | Recognise that sounds get fainter as the distance from the sound source increases. | Carry out a simple practical activity – pattern seeking. Gather and record data using straightforward scientific evidence to answer questions or support their findings. | 14 | |
| 4 | 1.2 Turn it up and down | Sound | Ear to stay | Recognise that vibrations from sounds travel through a medium to the ear. | Set up a simple practical enquiry, comparative and fair test. Take systematic and careful observations, using data loggers. | 15 | |
| 5 | 1.3 Making music | Sound | Pitch up | Find patterns between the pitch of a sound and features of the object that produced it. | Carry out simple practical enquiries, comparative and fair tests. Take systematic and careful observations. Record findings. Identify differences, similarities or changes. | 18-19 | |

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| 6 | 1.3 Making music | Sound | Junk band | Find patterns between the volume of a sound and the strength of the vibrations that produced it. Find patterns between the pitch of a sound and features of the object that produced it. | Use results to make improvements. | 20-21 | |
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Autumn 2 - Unit 2 – Living things

| Week | Unit | National Curriculum strand | Activity Title | Subject knowledge Learning outcomes | Working scientifically learning outcomes | Page link | Personal Notes |
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| 1 | 2,1 Guess who? | Living things and their habitats. | Who am I? | Recognise that living things can be grouped in a variety of ways. | Classify in a variety of ways to help in answering a question. | 26 | |
| 2 | 2.1 Guess who? | Living things and their habitats. | Key to the problem | Explore and use classification keys to help group, identify and name a variety of living things. | Classify in a variety of ways to help in answering a question. | 27 | |
| 3 | 2.2 Habitats | Living things and their habitats. | We're going on a bug hunt! | Explore and use classification keys to help group, identify and name a variety of living things in their local environment. | Classify in a variety of ways to help in answering a question. | 30 | |
| 4 | 2.2 Habitats | Living things and their habitats. | A bug's life | Explore and use classification keys to help group, identify and name a variety of living | Classify in a variety of ways to help in answering a question. | 31 | |

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| | | | | things in their local environment. | | | |
| 5 | 2.3 | Which kingdom? | High five | Explore and use classification keys to help group, identify and name a variety of living things. | Classify in a variety of ways to help in answering a question. | 34 | |
| 6 | 2.3 | Which kingdom? | Flower power | Explore and use classification keys to help group, identify and name a variety of living things. | Classify in a variety of ways to help in answering a question. | 35 | |

Spring 1 - Unit 3 - Looking at states

| Week | Unit | National Curriculum strand | Activity Title | Subject knowledge Learning outcomes | Working scientifically learning outcomes | Page link | Personal Notes |
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| 1 | 3.1 What's the matter? | States of matter | What a state! | Compare and group materials together, according to whether they are solids, liquids or gases. | Classify in a variety of ways to help in answering a question | 40 | |
| 2 | 3.1 What's the matter? | States of matter | A watery end | Observe some materials change state when they are heated, and measure or research the temperature at which this happens in degrees Celcius. | Make systematic and careful observations. | 41 | |
| 3 | 3.2 Ziggy's party | States of matter | It's melting | Observe some materials change state when they are heated or cooled, and measure or research the temperature at which | Carry out a simple practical enquiry – comparative test. Take accurate measurements. Use results to draw simple | 44 | |

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| | | | | this happens in degrees Celcius. | conclusions. | | |
| 4 | 3.2 Ziggy's party | States of matter | Let's make ice cream! | Observe some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celcius. | Make systematic and careful observations. Take measurements. Identify differences, similarities or changes related to simple processes. | 45 | |
| 5 | 3.3 Going round in circles | States of matter | Whatever the weather | Identify the part played by evaporation and condensation in the water cycle, and associate the rate of evaporation with temperature. | Make systematic and careful observations. Take measurements. Identify differences, similarities or changes related to simple processes. | 48 | |
| 6 | 3.3 Going round in circles | States of matter | Ziggy's clothes | Identify the part played by evaporation and condensation in the water cycle, and associate the rate of evaporation with temperature. | Set up a simple practical enquiry. Comparative and fair test, gather and record data. Report on findings and conclusions. | 49 | |

Spring 2 - Unit 4 – Teeth and Eating

| Week | Unit | National Curriculum strand | Activity Title | Subject knowledge Learning outcomes | Working scientifically learning outcomes | Page link | Personal Notes |
|------|---------------------------|----------------------------|---------------------------|---|---|-----------|----------------|
| 1 | 4.1 Tremendous teeth | Animals including humans | First impressions | Identify different types of teeth in humans and their simple functions | Make systematic and careful observations | 54 | |
| 2 | 4.1 Teeth and eating | Animals including humans | Tough teeth | Identify different types of teeth in humans and their simple functions | Make systematic and careful observations | 55 | |
| 3 | 4.2 Have you got guts? | Animals including humans | Food's incredible journey | Describe the simple functions of the basic parts of the digestive system in humans | Use different types of scientific enquiries – using secondary data to research, to answer questions | 58 | |
| 4 | 4.2 Have you got guts? | Animals including humans | Let's make a stomach! | Describe the simple functions of the basic parts of the digestive system in humans. | Carry out a simple practical enquiry. Make systematic and careful observations. | 59 | |

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| 5 | 4.3 The deadly and the dead | Animals including humans | A chain reaction | Construct and interpret a variety of food chains, identifying producers, predators and prey. | Record using diagrams. Draw simple conclusions. | 62 | |
| 6 | 4.3 The deadly and the dead | Animals including humans | Who do you eat? | Construct and interpret a variety of food chains, identifying producers, predators and prey. | Report on findings including oral and written explanations, displays or presentations of results and conclusions. | 63 | |

Summer 1 - Unit 5 - Power it up!

| Week | Unit | National Curriculum strand | Activity Title | Subject knowledge Learning outcomes | Working scientifically learning outcomes | Page link | Personal Notes |
|-------------|--------------------------------|-----------------------------------|-----------------------|---|---|------------------|-----------------------|
| 1 | 5.1 Living with electricity | Electricity | Which source? | Identify common appliances that run on electricity. | Set up a simple practical enquiry. Make systematic and careful observations. Draw simple conclusions. | 68 | |
| 2 | 5.1 Living with electricity | Electricity | What a shocker! | Identify common appliances that run on electricity. | Make systematic and careful observations. Draw simple conclusions. | 69 | |

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| 3 | 5.2 Let's make circuits. | Electricity | Simple circuits | Construct simple series circuits, identifying and naming basic parts, including cells, wires, bulbs, switches and buzzers. Identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery. | Make systematic and careful observations. Draw simple conclusions. | 72 | |
| 4 | 5.2 Let's make circuits. | Electricity | Changing circuits | Construct simple series circuits. | Set up a simple practical enquiry. Make systematic and careful observations. Draw simple conclusions. | 73 | |
| 5 | 5.3 Be alarmed! | Electricity | Conductors | Recognise some common conductors and insulators, and associate metals with being good conductors. | Set up a simple practical enquiry. Make systematic and careful observations. Draw simple conclusions. | 76 | |

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| 6 | 5.3 Be alarmed! | Electricity | Crime fighters | Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a series circuit. | Set up a simple practical enquiry. Make systematic and careful observations. Draw simple conclusions | 77 | |
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Summer 2 – Unit 6 - Brilliant Bubbles

**** This topic is an additional creative topic and goes beyond National Curriculum requirements.**

| Week | Unit | National Curriculum strand | Activity Title | Subject knowledge Learning outcomes | Working scientifically learning outcomes | Page link | Personal Notes |
|------|------------------------------------|----------------------------|---------------------|---|---|-----------|----------------|
| 1 | 6.1 I'm forever blowing bubbles | Working Scientifically | Better Bubbles | Compare materials - gases | Set up simple practical enquiries, comparative and fair tests | 82 | |
| 2 | 6.1 I'm forever blowing bubbles | Working Scientifically | Even better bubbles | Compare materials. | Ask relevant questions and use different types of scientific enquiries to answer them | 83 | |
| 3 | 6.2 Sweetie bubbles | Working Scientifically | Sherbet fizz | Compare materials - solids, liquids and gases | Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. | 88 | |

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| 4 | 6.2 Sweetie bubbles | Working Scientifically | Paying for air? | Compare materials - solids, liquids and gases Observe some materials change state when they are heated. | Asking relevant questions and using different types of scientific enquiries to answer them. | 89 | |
| 5 | 6.3 Yeasty bubbles | Working Scientifically | Use your loaf | Observe some materials change state when they are heated. | Asking relevant questions and using different types of scientific enquiries to answer them - pattern seeking. | 92-93 | |
| 6 | 6.3 Yeasty bubbles | Working Scientifically | Small but mighty | Compare materials - solids, liquids and gases | Set up simple practical enquiries - comparative and fair tests. Make systematic and careful observations, record findings. Use results to draw conclusions. | 94-95 | |

| Switched on Science – Year 4 Teeth and Eating | |
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| Activity Tough Teeth | Page 55 |
| Resources From previous lesson – chicken bones in vinegar, cola and water, egg shell in vinegar Dental products e.g. toothpaste, floss, mouthwash, disclosing tablets, toothbrush Mirrors | Tig Tag Resource Healthy Teeth |
| Learning Outcomes Identify different types of teeth in humans and their simple functions. Make systematic and careful observations. | Key Words Brush Canines Healthy Incisors Molars Plaque Teeth Toothpaste |
| Learning needed to be brought forward from previous session Give children mirror and ask them to look and find molars, incisors and canines in their own mouths. | |
| Starter Activity Children compare the chicken bones in cola, vinegar and water and the egg shells in vinegar from last week. What do the results tell them? What are their conclusions? Look back at their predictions – how good were their predictions? What do they think is the link to their own teeth? Children brush own teeth and then use disclosing tablets – to show plaque – what were the results? What does this mean? Who knows what plaque is and how it is formed? | |
| Main Activity / Activities <ul style="list-style-type: none"> • Show pictures of rotten teeth. (Use Tig Tag video here) • How can we keep our teeth healthy? What should we do? Share ideas onto large paper • Give groups box of dental products to explore, look at what they are for, ingredients etc. • What have they found out – share findings onto large paper. • Word search in dictionaries – fluoride. • What is it used for? Do any of the dental products have fluoride? • Show a TV advert for toothpaste – one mentioning fluoride. • Children create an advert for one of the products in the box. | |

- Plan first – what does the audience need to know? What do they want to teach the audience about dental hygiene?
- Which key words are they going to use?
- What 2 things do they want their audience to learn?
- What will their advert be like?
- Offer children – camera, video camera, card etc.

Mixed groups to support each other – key language on their tables

End Activity

If extra time needed – explain that they can work on the advert during next lesson. next lesson on advert.

Or groups pair up and children share adverts and give ‘constructive review comments’

Make a pledge – children write on a post it a pledge to do one thing that they are not already doing to look after their teeth. Put pledges around tooth display.

Learning needed to be taken forward to the next session

Why dental hygiene is important.

What role teeth have in cutting and chewing food ready for swallowing – they are the beginning of the digestive process.

Activity to go home – Find out - How are false teeth made?

How do pet owners keep dog teeth clean?