

# Sketchbook SCIENCE



Curriculum coverage for science and art



## 1. Dotty Fruits

	Science	Art
<b>England</b>	<p>Y5/6 – Living things and their habitats</p> <ul style="list-style-type: none"> <li>describe the life process of reproduction in some plants and animals</li> <li>take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</li> <li>record data and results of increasing complexity using, tables and bar graphs</li> </ul>	<p>KS2 – Pupils should be taught:</p> <ul style="list-style-type: none"> <li>to develop a wide range of art and design techniques in using colour, pattern, texture, line, shape, form and space</li> <li>about the work of a range of artists, craft makers and designers, describing the differences and similarities between different practices and disciplines, and making links to their own work</li> <li>to improve their mastery of art and design techniques, including drawing, painting and sculpture with a range of materials (for example, pencil, charcoal, paint, clay)</li> <li>about great artists, architects and designers in history</li> </ul>
<b>Scotland</b>	<p>By investigating the lifecycles of plants and animals, I can recognise the different stages of their development SCN 2-14a</p>	<p>Through observing and recording from my experiences across the curriculum, I can create images and objects which show my awareness and recognition of detail EXA 2-04a</p>
<b>Wales</b>	<p>I can recognise patterns from my observations and investigations and can communicate my findings</p> <p>I can explore relationships between living things, their habitats and their life cycles</p> <p>I can explain the role of different organs and systems that enable plants and animals to live and grow</p>	<p>I can compare my own creative work to creative work by other people and from other places and times</p>
<b>Northern Ireland</b>	<p>KS2 - Pupils should be enabled:</p> <ul style="list-style-type: none"> <li>to explore how living things rely on each other within the natural world, for example, learning about the main stages in the life cycle of some living things</li> </ul>	<p>KS2 - Pupils should be enabled:</p> <ul style="list-style-type: none"> <li>to engage with observing, investigating and responding to first-hand experiences, memories and imagination</li> <li>to collect, examine and select resource material to use in the development of ideas</li> <li>to look at and talk about the work of artists, designers and craft workers</li> </ul>

## 2. Pollination in a vase

	Science	Art
<b>England</b>	<p>Y3/4 – Plants</p> <ul style="list-style-type: none"> <li>identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers</li> <li>explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal</li> <li>gathering, recording, classifying and presenting data in a variety of ways to help in answering questions</li> <li>recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</li> </ul> <p>Y5/6 – Living things and their habitats</p> <ul style="list-style-type: none"> <li>describe the life process of reproduction in some plants and animals</li> <li>reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations</li> </ul>	<p>KS2 – Pupils should be taught:</p> <ul style="list-style-type: none"> <li>to develop a wide range of art and design techniques in using colour, pattern, texture, line, shape, form and space</li> <li>about the work of a range of artists, craft makers and designers, describing the differences and similarities between different practices and disciplines, and making links to their own work</li> <li>to improve their mastery of art and design techniques, including drawing, painting and sculpture with a range of materials (for example, pencil, charcoal, paint, clay)</li> <li>about great artists, architects and designers in history</li> </ul>
<b>Scotland</b>	<p>By investigating the lifecycles of plants and animals, I can recognise the different stages of their development SCN 2-14a</p>	<p>I have the opportunity to choose and explore a range of media and technologies to create images and objects, discovering their effects and suitability for specific tasks EXA 1-02a</p> <p>Through observing and recording from my experiences across the curriculum, I can create images and objects which show my awareness and recognition of detail EXA 2-04a</p>
<b>Wales</b>	<p>I can recognise patterns from my observations and investigations and can communicate my findings</p> <p>I can explore relationships between living things, their habitats and their life cycles</p> <p>I can explain the role of different organs and systems that enable plants and animals to live and grow</p>	<p>I can create my own designs and work collaboratively with others to develop creative ideas</p> <p>I can compare my own creative work to creative work by other people and from other places and times</p>
<b>Northern Ireland</b>	<p>KS2 – Pupils should be enabled:</p> <ul style="list-style-type: none"> <li>to explore how living things rely on each other within the natural world, for example, learning about the main stages in the life cycle of some living things</li> </ul>	<p>KS2 – Pupils should be enabled:</p> <ul style="list-style-type: none"> <li>to engage with observing, investigating and responding to first-hand experiences, memories and imagination</li> <li>to collect, examine and select resource material to use in the development of ideas</li> <li>to look at and talk about the work of artists, designers and craft workers</li> </ul>

## 3. Elongated figures

	Science	Art
<b>England</b>	<p>Y3/4 – Animals including humans</p> <ul style="list-style-type: none"> <li>• identify that humans and some other animals have skeletons and muscles for support, protection and movement</li> <li>• recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</li> <li>• reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</li> </ul>	<p>KS2 – Pupils should be taught:</p> <ul style="list-style-type: none"> <li>• to develop a wide range of art and design techniques in using colour, pattern, texture, line, shape, form and space</li> <li>• about the work of a range of artists, craft makers and designers, describing the differences and similarities between different practices and disciplines, and making links to their own work</li> <li>• to improve their mastery of art and design techniques, including drawing, painting and sculpture with a range of materials (for example, pencil, charcoal, paint, clay)</li> <li>• about great artists, architects and designers in history</li> </ul>
<b>Scotland</b>	<p>By researching, I can describe the position and function of the skeleton and major organs of the human body and discuss what I need to do to keep them healthy SCN 2-12a</p>	<p>I have the opportunity to choose and explore a range of media and technologies to create images and objects, discovering their effects and suitability for specific tasks EXA 1-02a</p> <p>Through observing and recording from my experiences across the curriculum, I can create images and objects which show my awareness and recognition of detail EXA 2-04a</p>
<b>Wales</b>	<p>I can explain the role of different organs and systems that enable plants and animals to live and grow</p> <p>I can recognise patterns from my observations and investigations and can communicate my findings</p>	<p>I can create my own designs and work collaboratively with others to develop creative ideas</p> <p>I can compare my own creative work to creative work by other people and from other places and times</p>
<b>Northern Ireland</b>	<p>KS2 – Pupils should be enabled:</p> <ul style="list-style-type: none"> <li>• to learn that humans have skeletons to protect major organs and support their bodies</li> </ul>	<p>KS2 – Pupils should be enabled:</p> <ul style="list-style-type: none"> <li>• to use a range of media, materials, tools and processes such as drawing, painting, printmaking, malleable materials, textile and three-dimensional construction, selecting which is appropriate in order to realise their personal ideas and intentions</li> </ul>

## 4. Not junk but art

	Science	Art
<b>England</b>	<p>Y3/4 – gathering, recording, classifying and presenting data in a variety of ways to help in answering questions</p> <p>Y3/4 – explore and use classification keys to help group, identify and name different items</p> <p>Y5/6 – compare and group together everyday materials on the basis of their properties, including hardness, solubility, transparency, conductivity (electrical and thermal) ,and response to magnets</p>	<p>KS2 – Pupils should be taught:</p> <ul style="list-style-type: none"> <li>to improve their mastery of art and design techniques, including collage and sculpture with a range of plastic</li> </ul>
<b>Scotland</b>	<p>Having explored the substances that make up Earth’s surface, I can compare some of their characteristics and uses</p> <p>SCN 2-17a</p>	<p>Through observing and recording from my experiences across the curriculum, I can create images and objects which show my awareness and recognition of detail</p> <p>EXA 2-04a</p>
<b>Wales</b>	<p>I can recognise patterns from my observations and investigations and can communicate my findings</p>	<p>I can compare my own creative work to creative work by other people and from other places and times</p> <p>I can explore and experiment with and then select appropriate creative techniques, practices, materials, process, resources, tools and technologies</p>
<b>Northern Ireland</b>	<p>KS2 – Pupils should be enabled:</p> <ul style="list-style-type: none"> <li>to explore ways in which people, plants and animals depend on the features and materials in places and how they adapt to their environment, for example learning about why materials are chosen for their use</li> <li>to investigate similarities and differences, patterns and change</li> </ul>	<p>KS2 – Pupils should be enabled:</p> <ul style="list-style-type: none"> <li>to collect, examine and select resource material to use in the development of ideas</li> <li>to use a range of media, materials, tools and processes such as drawing, painting, printmaking, malleable materials, textiles and three-dimensional construction, selecting which is appropriate in order to realise personal ideas and intentions</li> </ul>

## 5. Feltscapes

	Science	Art
<b>England</b>	<p>Y5/6 – properties and changes of materials</p> <ul style="list-style-type: none"> <li>• give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials</li> <li>• explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible</li> <li>• reporting and presenting findings from research</li> </ul>	<p>KS2 – Pupils should be taught:</p> <ul style="list-style-type: none"> <li>• to develop a wide range of art and design techniques in using colour, pattern, texture, line, shape, form and space</li> <li>• about the work of a range of artists, craft makers and designers, describing the differences and similarities between different practices and disciplines, and making links to their own work</li> <li>• to improve their mastery of art and design techniques, including drawing, painting and sculpture with a range of materials (for example, pencil, charcoal, paint, clay)</li> <li>• about great artists, architects and designers in history</li> </ul>
<b>Scotland</b>	<p>By contributing to investigations into familiar changes in substances to produce other substances, I can describe how their characteristics have changed SCN 2-15a</p>	<p>I have the opportunity to choose and explore a range of media and technologies to create images and objects, discovering their effects and suitability for specific tasks EXA 1-02a Through observing and recording from my experiences across the curriculum, I can create images and objects which show my awareness and recognition of detail EXA 2-04a</p>
<b>Wales</b>	<p>I can recognise that our planet provides natural materials and can explain why they may have been processed to make them useful</p> <p>I can evaluate methods to suggest improvements</p>	<p>I can create my own designs and work collaboratively with others to develop creative ideas</p> <p>I can compare my own creative work to creative work by other people and from other places and times</p>
<b>Northern Ireland</b>	<p>KS2 – Pupils should be enabled:</p> <ul style="list-style-type: none"> <li>• to explore ways in which people, plants and animals depend on the features and materials in places and how they adapt to their environment, for example learning about why materials are chosen for their use</li> </ul>	<p>KS2 - Pupils should be enabled:</p> <ul style="list-style-type: none"> <li>• to engage with observing, investigating and responding to first-hand experiences, memories and imagination</li> <li>• to collect, examine and select resource material to use in the development of ideas</li> <li>• to look at and talk about the work of artists, designers and craft workers</li> </ul>

## 6. Liquid art

	Science	Art
<b>England</b>	<p>Y3/4 – States of matter</p> <ul style="list-style-type: none"> <li>compare and group materials together according to whether they are solids, liquids or gases</li> </ul> <p>Y5/6 – Forces</p> <ul style="list-style-type: none"> <li>explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object</li> <li>identify the effects of air resistance, water resistance and friction, that act between moving surfaces</li> </ul>	<p>KS2 – Pupils should be taught:</p> <ul style="list-style-type: none"> <li>to develop a wide range of art and design techniques in using colour, pattern, texture, line, shape, form and space</li> <li>about the work of a range of artists, craft makers and designers, describing the differences and similarities between different practices and disciplines, and making links to their own work</li> <li>to improve their mastery of art and design techniques, including drawing, painting and sculpture with a range of materials (for example, pencil, charcoal, paint, clay)</li> <li>about great artists, architects and designers in history</li> </ul>
<b>Scotland</b>	<p>By investigating how friction, including air resistance, affects motion, I can suggest ways to improve efficiency in moving objects SCN 2-07a</p> <p>I have collaborated in investigations to compare magnetic, electrostatic and gravitational forces and have explored their practical applications SCN 2-08a</p>	<p>Inspired by a range of stimuli, I can express and communicate my ideas, thoughts and feelings through activities within art and design. EXA 0-05a / EXA 1-05a / EXA 2-05a</p> <p>I can create and present work that shows developing skill in using the visual elements and concepts EXA 2-03a</p> <p>I have the opportunity to choose and explore a range of media and technologies to create images and objects, discovering their effects and suitability for specific tasks EXA 1-02a</p>
<b>Wales</b>	<p>I can recognise patterns from my observations and investigations and can communicate my findings</p> <p>I can explore and describe the properties of materials and justify their uses</p> <p>I can communicate the effect forces have on myself and on objects</p>	<p>I can explore and experiment independently and demonstrate technical control with a range of creative materials, processes, resources, tools and technologies showing innovation and resilience</p> <p>I can explore the effects that a range of creative techniques, materials, processes, resources, tools and technologies have on my own and others' creative work</p>
<b>Northern Ireland</b>	<p>KS2 – Pupils should be enabled:</p> <ul style="list-style-type: none"> <li>to explore ways in which people, plants and animals depend on the features and materials in places and how they adapt to their environment, for example learning about why materials are chosen for their use</li> <li>to explore the causes and effect of energy, forces and movement</li> </ul>	<p>KS2 – Pupils should be enabled:</p> <ul style="list-style-type: none"> <li>to engage with observing, investigating and responding to first-hand experiences, memories and imagination</li> <li>to collect, examine and select resource material to use in the development of ideas</li> </ul>

## 7. Shadows and silhouettes

	Science	Art
<b>England</b>	<p>Y3/4 – Light</p> <ul style="list-style-type: none"> <li>recognise that shadows are formed when the light from a light source is blocked by an opaque object</li> <li>find patterns in the way that the size of a shadow changes</li> </ul> <p>Y5/6 – Light</p> <ul style="list-style-type: none"> <li>use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them</li> </ul>	<p>KS1 – Pupils should be taught:</p> <ul style="list-style-type: none"> <li>about the work of a range of artists, craft makers and designers, describing the differences and similarities between different practices and disciplines, and making links to their own work</li> </ul> <p>KS2 – Pupils should be taught:</p> <ul style="list-style-type: none"> <li>to develop their techniques, including their control and their use of materials, with creativity, experimentation and an increasing awareness of different kinds of art, craft and design</li> <li>to improve their mastery of art and design techniques, including drawing, painting and sculpture with a range of materials (for example, pencil, charcoal, paint, clay)</li> </ul>
<b>Scotland</b>	<p>By exploring reflections, the formation of shadows and the mixing of coloured lights, I can use my knowledge of the properties of light to show how it can be used in a creative way</p> <p>SCN 2-11b</p>	<p>I can create and present work that shows developing skill in using the visual elements and concepts</p> <p>EXA 2-03a</p> <p>Through observing and recording from my experiences across the curriculum, I can create images and objects which show my awareness and recognition of detail</p> <p>EXA 2-04a</p>
<b>Wales</b>	<p>I can explore and communicate the basic properties of light, sound, electricity and magnetism</p> <p>By manipulating the properties of sound and light, I can produce a desired effect</p>	<p>I can draw upon my familiarity with a range of discipline-specific techniques in my creative work</p> <p>I can give and consider constructive feedback about my own creative work and that of others, reflecting on it and making improvements where necessary</p> <p>I can identify and respond creatively to challenges with resilience and flexibility</p>
<b>Northern Ireland</b>	<p>KS2 – Pupils should be enabled:</p> <ul style="list-style-type: none"> <li>to explore how sound travels and light shines through some materials</li> <li>to explore the formation of shadows and how they change</li> </ul>	<p>KS2 – Pupils should be enabled:</p> <ul style="list-style-type: none"> <li>to develop their understanding of the visual elements of colour, tone, line, shape, form, space, texture and pattern to communicate their ideas</li> <li>to collect, examine and select resource material which is appropriate in order to realise personal ideas and intentions</li> </ul>



## 8. Space craters

	Science	Art
<b>England</b>	<p>Y5/6 - Earth and space</p> <ul style="list-style-type: none"> <li>Describe the movement of the Earth, and other planets, relative to the Sun in the solar system</li> <li>Describe the movement of the Moon relative to the Earth</li> <li>Describe the Sun, Earth and Moon as approximately spherical bodies</li> </ul>	<p>KS2 – Pupils should be taught:</p> <ul style="list-style-type: none"> <li>to develop their techniques, including their control and their use of materials, with creativity, experimentation and an increasing awareness of different kinds of art, craft and design</li> <li>to improve their mastery of art and design techniques, including drawing, painting and sculpture with a range of materials (for example, pencil, charcoal, paint, clay)</li> <li>about great artists, architects and designers in history</li> </ul>
<b>Scotland</b>	<p>By observing and researching features of our solar system, I can use simple models to communicate my understanding of size, scale, time and relative motion within it SCN 2-06a</p>	<p>Inspired by a range of stimuli, I can express and communicate my ideas, thoughts and feelings through activities within art and design. EXA 0-05a / EXA 1-05a / EXA 2-05a</p> <p>I can create and present work that shows developing skill in using the visual elements and concepts EXA 2-03a</p> <p>I have the opportunity to choose and explore a range of media and technologies to create images and objects, discovering their effects and suitability for specific tasks EXA 1-02a</p>
<b>Wales</b>	<p>I can use my knowledge and understanding of the Earth to compare it with other planets, and to describe the relative positions and key features of the Sun and planets in the solar system</p>	<p>I can explore and experiment independently and demonstrate technical control with a range of creative materials, processes, resources, tools and technologies showing innovation and resilience</p> <p>I can explore the effects that a range of creative techniques, materials, processes, resources, tools and technologies have on my own and others' creative work</p>
<b>Northern Ireland</b>	<p>KS2 – Pupils should be enabled:</p> <ul style="list-style-type: none"> <li>to explore how sound travels and light shines through some materials</li> <li>to explore the formation of shadows and how they change</li> </ul>	<p>KS2 – Pupils should be enabled:</p> <ul style="list-style-type: none"> <li>to develop their understanding of the visual elements of colour, tone, line, shape, form, space, texture and pattern to communicate their ideas</li> <li>use a range of media, materials, tools and processes such as drawing, painting, printmaking, malleable materials, textile and three-dimensional construction, selecting which is appropriate in order to realise their personal ideas and intentions</li> </ul>