

Year 1 – Fruit and Vegetables

Guidance on the Joint Delivery of Design & Technology and Science Units of the Key Stages 1 and 2 QCA/SEU Schemes of Work

Design & Technology	Unit 1C	Eat more fruit and vegetables
Science	Unit 1A	Ourselves

Activities

D&T Unit 1C Eat more fruit and vegetables

IEA: investigative and evaluative activities

Examine and discuss a range of fruit/vegetables, describing using a word bank. Evaluate existing salads using a taste test and record preferences.

FPT: focused practical tasks

Discuss health and safety when working with fruit and vegetables. Practice techniques for cutting and shaping. Observe changes during cooking. Try different dressings. Discuss healthy eating advice.

DMA: design and make assignments

Design and make a product for a particular occasion or group to encourage them to eat more fruit or vegetables.

Sc Unit 1A Ourselves

- 1 Play *Simon says* with emphasis on naming parts.
- 2 Introduce senses through story. Do a series of short activities related to each of the five senses.
- 3 Model/draw a variety of animals and discuss whether humans should be included.
- 4 Assemble a collection of photographs to discuss changes with age.
- 5 Make a comparison of adult and young animals on a visit or using animals brought in.
- 6 Measure height using non-standard units. Use surveys to predict whether the oldest people are the tallest and find out.
- 7 Collect data about themselves and represent on pictograms/charts.
- 8 Sort living and non-living using invertebrates and objects.
- 9 Discuss our needs for food and drink. Draw food for familiar animals.

Commentary

There are a number of ways to link the two units of *Ourselves (Sc 1A)* and *Eat More Fruit (D&T 1C)*.

Here we suggest that investigating fruit and vegetables provides a good context for learning about the senses, whilst also providing children with knowledge about taste, smell and appearance of foods that they will use when designing a salad in design & technology.

In the science work children find out about changes with age; design & technology work will give them first-hand experience of how skills (in this case food preparation) improve with age and experience as they become more dextrous.

Survey skills are developed in science and can be used to inform the design process as children consider the preferences of others. The design & technology DMA provides opportunities for the knowledge and skills gained during these units to be applied in the context of making a product.

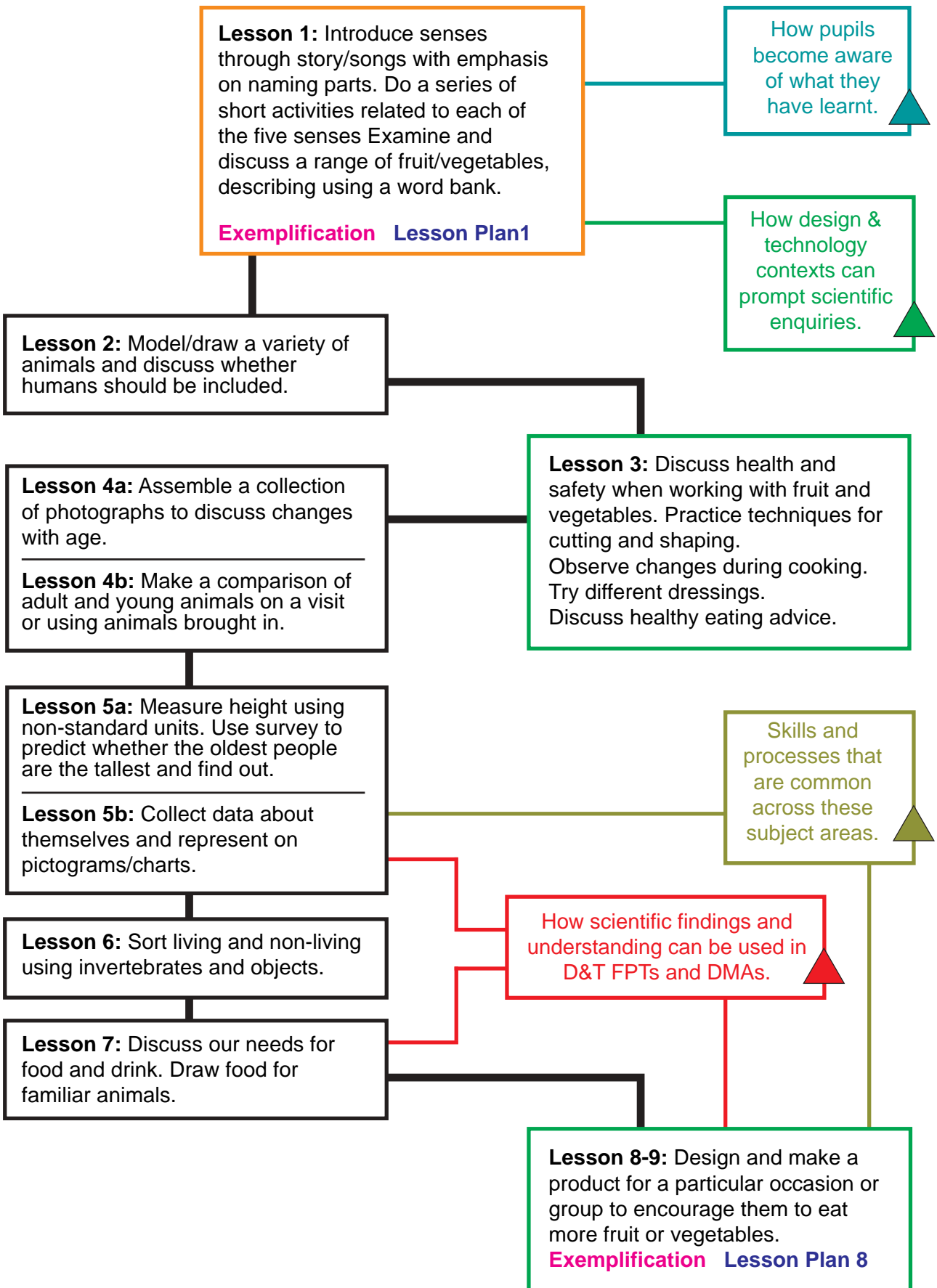
Non-statutory PSE objectives can also be achieved through this unit. **(KS1.3)**.

Commentary and guidance on sequencing activities

Science

Linking

Design & Technology



Guidance

It is suggested that the unit begins with a *Simon says* game, or story and discussion about eyes, ears etc., with emphasis on the naming of parts. The first lesson moves on to investigating fruit and vegetables using the senses of taste, smell, touch and sight. Learning is recorded using digital cameras, children's drawings and notes. The lesson concludes with the compilation of a word bank as a whole-class activity to display with photos and pictures of the foods. Children brainstorm all that can be made with fruit and vegetables.

The next design & technology session begins with a class discussion about health and safety when working with fruit and vegetables. Children are introduced to tools e.g. lemon squeezer, peeler, knife, and salad spinner. Children practice techniques for cutting and shaping and could observe changes during cooking, e.g. a baked apple or potato. Children then make a small mixed salad from the prepared ingredients, plus simple dressings – water, syrup, lemon/orange juice and discuss healthy eating advice and ideas about a balanced diet.

In science (Lesson **4a**) children can discuss how skills improve, for example, in preparing food and how food preferences change, during the discussion about changes with age. During a survey of preferences about themselves (Lesson **5b**) a database can be compiled which includes details of favourite fruit and vegetables. This could be done using ICT.

The final activity is a design and make assignment, creating a picnic salad for a named person or group with specifications based on data collected regarding preferences and ideas about healthy eating and a balanced diet. It is suggested that this take place over two lessons so ingredients can be purchased according to children's ideas.

NB It should be noted that although the word *vegetable* is used in here it is not a scientific term. On the other hand, *fruit* is a scientific term, meaning *the fleshy or dry ripened ovary of a plant that encloses the seed or seeds*.

Thus cucumbers, bean pods and tomatoes are fruits. Children might be interested to know that what some of what we call 'vegetables' are, in fact, fruits.



How design & technology contexts can prompt scientific enquiries

In the first activity of the design and technology unit children gain knowledge of fruits and vegetables from first hand experience before going on to design and make a salad. This activity provides an ideal context for work on the senses in science, in which children can find out about tastes, smells, textures and appearance of foods. It is suggested that learning objectives for both subjects can be achieved during a single session, therefore making efficient use of curriculum time through this selective approach to cross-curricular teaching.



How scientific findings and understanding can be used in D&T FPTs and DMAs

How scientific findings and understandings can be used in design and technology activities

In science children find out about the food preferences of themselves and others in a systematic way, so addressing the requirements of Sc1 in the National Curriculum. They also learn about our need for food and drink and consider the constituents of a 'healthy' or 'balanced' diet. This understanding can be applied in the DMA – making a product to encourage the eating of fruit or vegetables. For example, children may discover that apples and bananas are the most popular fruit amongst their classmates and so design a fruit salad with that in mind. They will learn that a balanced diet includes five portions of fruit or vegetables a day and a salad will contribute to this target.



Skills and processes that are common across these subject areas

Exploring and using the senses is a focus for scientific enquiry (**Sc1**) in the unit. The design and technology activities will complement this learning. Data collection is required in both units – in science a survey of the class is conducted. Such techniques can also be developed and used to find out about the preferences of the class e.g. asking a group of children and recording their replies in a table.



How pupils become aware of what they have learnt

(for example by using this experience in a future activity)

Children will learn about the sensory qualities of food in the first lesson. They will draw upon this knowledge during the DMA. In discussions about health and hygienic practice, children will learn about the need for a healthy diet, the need to wash hands before preparing food and ways of using tools safely. This learning will be applied in the design and technology DMA, which can begin with a resume of this learning from the earlier activities in both science and design and technology. For example the class might have made books or posters about safe practice with food, which can be reviewed at this time.

LESSON 1 **EXPLORING FRUIT AND VEGETABLES** (design & technology and science) 1 hr 15mins

Learning objectives/outcomes – children should be taught:

- Sc1 2a,b** ■ to ask questions and decide how to answer them using first-hand experience
- Sc2** ■ about the senses that enable humans to be aware of the world around them
- D&T 2b** ■ to explore the sensory qualities of fruits and vegetables

Vocabulary Fruit Vegetable Smell Touch Texture Observe Taste

Resources A range of fruit and vegetables, plates, knife, hand lenses, paper, drawing materials, digital cameras.

- Key questions** ■ *How can we find out about these foods? How do we 'observe'?*
 ■ *What senses can we use?*
 ■ *What does this look like/smell like/ feel like/ taste like?*
 ■ *How can we describe this?*
 ■ *What is this called?*

Key skills speaking and listening, use of appropriate vocabulary

Teaching and learning activities

Introduction – whole class – 20 minutes

Start with 'Simon says' game or story and discussion about eyes, ears etc with emphasis on naming parts. Explain the lesson entails observing fruit and vegetables using taste, smell, touch, and sight – this could be a class discussion as teacher prepares the fruits and vegetables. The teacher can elicit children's ideas about where it is grown, what part of the plant it is and what it is called in order to introduce vocabulary. Conclude by encouraging the children to state questions that can be answered by looking at the food more closely e.g. 'I wonder what they smell like?' 'Are all the fruits sticky?'

Senses circus – whole class in groups – 30 minutes

A range of activities for children to examine closely the prepared fruit and vegetables.

Sight – using digital microscope, hand-lenses and viewing frames to observe appearance, colour matching – drawing (colour and or shape) of the fruit/vegetable outside and inside

Smell, blind-folded pairs game– match two smells using samples of foods in film containers

Feel/texture – match textures to symbols or draw textures

Taste – put foods in order from sweetest to not sweet, sour to not sour.

Recording using digital cameras, drawings and notes.

Clear away and Plenary – whole class – 5 + 15 minutes

Finish by compiling a word bank of adjectives and nouns, as a whole class, to display with photos of the foods. Brainstorm all the foods that can be made with fruit and veg.

Differentiation

Some children will be able to write their own words for the word bank. Some children will need adult support to investigate the foods carefully.

Assessment opportunities

- Note children who are able to suggest appropriate questions during the introduction
- Note children who can observe carefully during the circus of activities
- Note children's contribution to the word bank during the plenary

Notes: health and safety

- Ensure food is prepared with hygienic practice in mind. Wash all fruit and vegetables before use.
- Check your LEA and school policy on tasting. Ensure teachers and helpers are aware of any children with food allergies – a note home to parents and carers is the best way of doing this.
- Provide individual portions for tasting. Blindfolds may transmit eye infections – line blindfolds with a tissue.
- Homework – children could look for fruit and vegetables at home to investigate in a similar way.
- *See also* PSE guidelines

LESSON 8 PREPARING TO MAKE A SALAD (design & technology)

45 minutes

Learning objectives/outcomes – children should be taught:

- D&T 1a** ■ to generate ideas by drawing on their experiences
- 1d** ■ to plan by suggesting what to do and what is required

Vocabulary	Fruit Preference	Vegetable Plan	Touch List	Taste Salad	Design Dressing
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Resources Recorded work from previous lessons in this linked unit. Paper and writing materials. Word bank including ingredient and equipment words.

- Key questions**
- *What do we know about healthy and balanced diets?*
 - *What do we know about the preferences of the group/class?*
 - *What will you need? Where will you work? Who will do what?*
 - *How much time do you have? What will you need to do first?*
 - *How will you present the finished product?*
 - *How can you make fruit and vegetables interesting to eat?*
 - *What could you use? What will it look/taste like?*

Key skills speaking and listening, including use of appropriate vocabulary

Teaching and learning activities**Introduction** – whole class – 20 minutes

Explain that children have the task of developing an idea for a salad dish to take on a picnic or serve at a party to encourage everyone to eat healthy foods. Review the learning from the science and design & technology work of the unit.

Discuss with children the possible products they might design and make e.g. fruit salads, vegetable salads, fruit drinks.

Remind them of the findings of the survey of the preferences of the class or group and the observations they made in lesson 1.

Discuss how much of each fruit and vegetable might be needed.

Discuss how to plan the work.

Planning – whole class – 15 minutes

Allow the children to decide, in pairs or small groups, what type of product they want to make e.g. juicy fruit salad, colourful vegetable salad and why it is appropriate for their target group. Ask them to write a shopping list of what they need – tools and ingredients.

Plenary – whole class – 10 minutes

Ask pairs to report to you on their plans and requirements. Compile a class shopping list for the ingredients and list the equipment required for the next lesson.

Explain that the next lesson will involve making and evaluating the salad.

Differentiation – some children will be able to record their plan independently. Others will need adult or peer support to record their ideas.

Assessment opportunities

- Note children who are able to draw on previous learning to inform their designing

Notes: health and safety

- Ensure food is prepared with hygienic practice in mind. Wash all fruit and vegetables before use.
- Check your LEA and school policy on tasting. Ensure teachers and helpers are aware of any children with food allergies – a note home to parents and carers is the best way of doing this.
- Provide individual portions for tasting.
- Homework, Class support, Points to remember, Organisation

Activity description

Teacher Helen Wilcock from Moorlands Infant School, Bath collected a large range of fruit and vegetables for her Year one class to examine and discuss. The collection included a leek, a lemon, a courgette, a red onion, a passion fruit, a pomegranate, a grapefruit, a mango, a paw-paw and a butternut squash. This range could have been reduced or expensive items replaced to reduce cost.



Helen explained that the children were going to find out about what the fruits and vegetables looked like, smelled like, felt like and tasted like. A good discussion ensued as the teacher held up each fruit or vegetable and asked the children some questions such as 'what part of the plant is this?' 'what will we find inside?', 'what do we call this?'. Some children were able to raise their own questions at this point; 'I wonder what that will smell like?' 'How many seeds are in there?', 'What would happen if you ate the outside of that passion fruit?'. During this introduction Helen put the names of the fruits and vegetables on cards to begin a word bank. There was also some discussion about the term fruit as some children realised that what they called a 'vegetable' were actually fruits.

The circus of activities gave children further opportunities to explore the items more closely using their senses of smell, touch, taste and sight. The use of ICT (digital cameras and a digital microscope) and the use of language (names of fruits, vegetables, adjectives) was also integrated into the session.



In one activity children grouped halves of the fruit and vegetables into those with similar textures. This was recorded by the children taking a digital image of their groupings.

A second group of children looked at the collection and recorded appearance and pattern by drawing using a small card frame to isolate a part of the fruit, and by saving a magnified image on the class PC.

A third group worked with a parent-helper on the 'taste' activity, where the children ordered samples of fruit and vegetables from most to least sweet and most to least sour. Ideal fruits for this activity are lemon, apple, banana, pear, grape and orange.

A fourth group played a matching game with 'smell-pots' made by putting small portions of fruit and vegetables in 35 mm film canisters so the children could smell the contents without seeing them. Contents included onion, leek, apple, lemon and banana. The six children in the group passed the pots around, identifying smells and trying to match two the same. They noticed that it was difficult to distinguish between that of a leek and an onion. They also noticed

some smells were familiar in other contexts, for example, banana milkshake and lemon washing up liquid.

During a plenary discussion, Helen asked the children to write on a flip chart, adjectives that they had used to describe the collection. These fell into categories of:

- **texture** – soft, hard, squashy, bumpy
- **taste** – sour, sweet, bitter
- **appearance** – wiggly, shiny, golden.

Activity description

In this lesson, the class were asked to design a salad dish to take on a picnic or serve at a Golden Jubilee picnic party. Children were reminded about the first lesson in which they had explored the sensory qualities of fruit and vegetables and had access to prints of the digital photos that they had taken of them. They drew on this prior learning to inform their design ideas.

Children also drew on prior experiences they had had in cooking and food technology contexts in order to consider the tools required to prepare the salad (Lesson 3).

The format planning sheet (figure 10)

A TASTY SALAD

We are going to make a

It will be for

Ingredients we will need:

Tools we will need:

After an initial discussion the children were asked to work in pairs to develop their design. They were provided with a format (figure 10) on this occasion. The children came up with a range of ideas for 'themed' salads based on:

Appearance a 'Golden Salad' that included the yellow and golden fruit and vegetables that they had encountered during lesson one, and a 'Rainbow Salad'.

Texture a 'Crunchy Salad', that included carrots, cucumber and apple

Taste a 'Sweet Salad' that included a sugar syrup.

They also made some estimation of the quantities of ingredients that were required. The lists of tools required for the task included '*knives, chopin bords, forcs, spoons*', and '*a big bole*'. Some children were able to draw a picture of the finished product in the time allowed, showing the sizes and shapes of the ingredients.



Most children produced work that would equate to the requirements for National Curriculum level two where pupils '*generate ideas and plan what to do next, based on their experience of working with materials and components. They use models, pictures and words to describe their designs.*'

The session concluded with children telling the rest of the class of their plans.