



Medium Term Plan

Diet and Digestion



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P levels

Performance attainment targets (P scales) and performance descriptors are used for pupils aged 5 to 16 with special educational needs (SEN) who are working below the standard of the national curriculum tests and assessments. PSTT recognises that the national curriculum levels used in this document are no longer current. We have had so many requests to return these materials to the website that they remain in the documents as a guide for those who have used them in the past. The written statements may be useful to others as an indication of children's development. For further information about P levels see:

<https://www.gov.uk/government/publications/p-scales-attainment-targets-for-pupils-with-sen>

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Primary Science Teaching Trust recommends that a full risk assessment is carried out before undertaking in the classroom any of the practical investigations contained in the plans.

Safety Note

PSTT advises teachers to refer to either CLEAPSS website or SSERC website for up to date health and safety information when planning practical activities for children.

Big Questions

- Where does your food go?
- What is digestion?
- Is fat bad for you?
- What makes you eat?
- Is food unhealthy?
- What is a vitamin?
- What is a mineral?
- Do we really need fibre?

Learning Objectives

Pupils will have opportunities:

- To be able to recognise foods which are healthy and unhealthy.
- To explore how food is vital for energy, growth and health.
- To explore the main parts of the digestive system and the process of digestion.

Answers

- Food goes into your mouth, is pushed down to the stomach and through the intestines where nutrients are absorbed into blood vessels. The waste (faeces) leaves through the anus.
- Digestion is the breakdown of food into soluble substances.
- Fat is needed for energy in animals but if too much fat is eaten it is stored in the body. This can cause problems including heart disease.
- We eat to provide energy for our bodies and if we don't eat we can feel hungry.
- It is important to eat a balanced diet which includes many types of foods.
- A vitamin is a group of substances needed in small quantities by animals.
- A mineral is a natural inorganic substance, such as phosphorous and calcium.
- We need fibre to maintain a healthy digestive system and regular bowel movements.

Quick review activities

- Show two pictures of meals and ask pupils to decide which is unhealthy or healthy
- Match the diet to the person (supersize vs superskinny)
- Eat some dried foods e.g. digestive biscuit and talk about how they feel (thirsty?)
- Keep a class tally chart for a week to record how often pupils eat chips, burgers, sweets, fruit, etc.
- Make a picture menu of school dinners
- Make a chart of pupils' favourite drinks

Vocabulary relevant to this topic

- Ill – to have a disease or deficiency
- Healthy – free from disease through healthy choices; good for you
- Unhealthy – more likely get a disease through unhealthy choices: not good for you
- Diet – what you eat
- Balanced diet – food that provides for healthy living
- Unbalanced diet- food that provides for unhealthy living
- Growth – get bigger
- Carbohydrate – foods containing sugars or starches that provide energy
- Protein – foods for growth and repair
- Fat – foods for insulation and storage
- Vitamin and minerals– needed for a healthy body
- Fibre – non digestible part of our diet
- Digestion – breaking down of food to make small soluble pieces (nutrients)
- Egestion – removal of waste food not needed by body
- Absorbed – nutrients move from gut to blood
- Energy- released from food to allow the body to move, keep warm etc
- Mouth- where food is cut up and ground down by the teeth.
- Food pipe (oesophagus)- food is pushed down this by swallowing to the stomach.
- Stomach- where food is mixed with acid to kill germs.
- Intestines- where food is digested and absorbed.
- Chew, Swallow
- Soak up
- Chop, Mix, Squeeze

Background information about this topic

- The digestive system is made up of mouth, food pipe, stomach and intestines. The food is taken into the mouth where it is chewed and broken down into smaller pieces and saliva begins to turn starch into sugar. Muscles then push the food down the food pipe into the stomach about like squeezing toothpaste down a tube and mucus helps food to slide down. Acid is added in the stomach to kill bacteria and also activate an enzyme that begins to digest protein. More enzymes are added as the food moves into the first part of the small intestine. As the food moves along the small intestine it looks like a watery fluid and the smallest parts of the digested food are then absorbed in the intestines and transported by the blood to other parts of the body where it is used in growth, repair and energy. Once the nutrients have been absorbed only waste material e.g. undigested fibre and water remain. As this passes along the large intestine water is removed and the nearly solid waste is egested through the anus.
- A balanced diet includes water, vitamins, minerals, carbohydrates, proteins, fibre and small amounts of fat. Carbohydrates and fats give the body energy: fats also help keep cells healthy. Proteins are used for growth and repair and vitamins/ minerals help cells work properly and prevent diseases like rickets, scurvy and anaemia. About 70% of the body is water and it is the main part of the blood. Water is used to dilute toxic waste and excrete it as urine. You can survive for about a month with no food but only a few days without water. Most water comes from drinking but even 'dry' foods like biscuits contain small amounts of water.
- A balanced diet contains the appropriate needs for the body and is healthy. Certain foods are rich in nutrients and we can test for carbohydrates using Iodine which will turn from brown to black in the presence of starch. Benedict's reagent will change from blue to orange or red in the presence of sugar when heated. DCPIP solution will turn from blue to colourless in the presence of vitamin C. We can test and compare the energy content of food by burning it and measuring the temperature change of water in a test tube over the burning sample.

Diet and digestion P1-3

Objective 1: To be able to recognise foods which are healthy and unhealthy.

Descriptions of intended outcomes at different levels of attainment

- Encounters a range of sensory evidence during food activities (P1i)
- Gives intermittent reactions to food activities (P1ii)
- Begins to attend and respond to different foods (P2i)
- Remembers learned responses over short periods e.g. rejecting foods after recent experience of smelling them (P2ii)
- Requests activity with food e.g. reaches for particular food to feel (P3i)
- Chooses a favourite food experience (P3ii)

Diet and digestion P1-3

Objective 1: To be able to recognise foods which are healthy and unhealthy.

<p>Possible Activities:</p>	<p>Resources:</p>
<p>Experience textures of different foods e.g. brittle biscuits, slippery jelly, eating cooked long spaghetti, picking up peas with fingers</p>	<p>Various examples of tactile food e.g. biscuits, jelly, cooked spaghetti, tomatoes, peas, custard, cereals</p>
<p>Optional activities you might like to try include:</p>	<p>Resources:</p>
<p>Experience the smells of different foods</p>	<p>Smelly cheese, herbs, cooked cabbage, pickles, onions</p>
<p>Create a sensory tub using some firmer foods</p>	

Points to Note:

Some pupils may be allergic to certain foods and some pupils may not be able to eat solid foods

Diet and digestion P1-3

Objective 2: To explore how food is vital for energy, growth and health.

Descriptions of intended outcomes at different levels of attainment

- Participation is fully prompted (P1i)
- Reacts as light flashes or music plays (P1ii)
- Changes body language in a more sustained way during experiences (P2i)
- Performs actions by trial and improvement (P2ii)
- Shows interest in the result of their own actions (P3i)
- Initiates interactions e.g. reaching for foods when music played (P3ii)

Diet and digestion P1-3

Objective 2: To explore how food is vital for energy, growth and health.

<p>Possible Activities:</p>	<p>Resources:</p>
<p>Explore foods that give us energy – and try to get pupils to make a fast action (fast for them). Also maybe flash a yellow light at the same time and play energetic music.</p>	<p>Energy foods e.g. oils, margarine, bread, biscuits, pasta, yellow light, energetic music, CD player or IWB, speakers, internet access</p>
<p>Optional activities you might like to try include:</p>	<p>Resources:</p>
<p>Explore foods that help us grow. Get pupils to try move hands out to show getting bigger.</p>	<p>Protein foods like meat, cheese. milk, fish, IWB, speakers, internet access</p>
<p>Explore foods that keep us healthy. Get pupils to try and clap, show a blue light and play music at the same time e.g. http://www.youtube.com/watch?v=3H8_6gMH4Do</p>	

Points to Note:

Be aware of food allergies

Diet and digestion P1-3

Objective 3: To explore the main parts of the digestive system and the process of digestion.

Descriptions of intended outcomes at different levels of attainment

- Allows themselves to be involved in or may resist the activity (P1i)
- May have periods of alertness during activities (P1ii)
- Accepts/ engages in coactive or shared exploration (P2i)
- Gathers sensory evidence by observing for short but sustained periods during activities (P2ii)
- Positively or negatively anticipates digestion activities (P3i)
- Actively explores digestion activities and outcomes for longer (P3ii)

Diet and digestion P1-3

Objective 3: To explore the main parts of the digestive system and the process of digestion.

<p>Possible Activities:</p>	<p>Resources:</p>
<p>Experience before and after of reducing foods to smaller pieces e.g. by mashing, chopping, crushing , liquidising and playing a ‘Digestion’ song at same time</p>	<p>Foods to mash (e.g. boiled potatoes, banana), chop (e.g. carrots, bread), crush (e.g. garlic, biscuits), liquidise (e.g. boiled /tinned vegetables), potato masher, fork, knife and board, rolling pin, plastic bags, liquidiser</p>
<p>Optional activities you might like to try include:</p>	<p>Resources:</p>
<p>Draw out a large simple digestive system on the playground or in the hall. Move pupils through digestion using actions at different points e.g. clap hands for teeth, squeeze pupils gently as they go down food pipe, use large elastic hoop or parachute as stomach , wiggle wheel chairs along the intestines and make a rude noise as they come out the end.</p>	<p>Chalk to tape to draw outline, large space, large elastic hoop, parachute</p>
<p>Experience squeezing food in a large ‘stomach’ . Add all the ingredients and then let pupils have a go at squeezing it</p>	

Points to Note:

Aware of pupils with food allergies and choking hazards.

Pick digestive actions suitable for the needs/ mobility of the pupils.

Diet and digestion P4-6

Objective 1: To be able to recognise foods which are healthy and unhealthy.

Descriptions of intended outcomes at different levels of attainment

- Follows a step-by step procedure e.g. adding faces to food (P4i)
- Shows interest in sorting the foods (P4ii)
- Cooperates with turn taking to add labels to foods (P5i)
- Matches label to appropriate food with some help (P5ii)
- Records using the foods by sorting into simple groups with prompting (P6i)
- Makes clear choices between healthy and less healthy foods (P6ii)

Possible Activities:	Resources:
<p>Work with pupils to add smiley or unhappy faces to foods they can eat a lot of and foods they should eat less of.</p> <p>Using a paper plate, pupils draw their favourite meal and then add smiley faces and unhappy faces.</p> <p>Begin to sort obvious foods into simple groups e.g. fruit and veg, meat and fish, dairy, cereals</p> <p>Observe and taste a variety of fruit, use magnifiers if appropriate. Take pictures as pupils try and use to make a display of favourite fruits.</p>	<p>Examples of different food, simple food group labels, paper plates, felt pens or pictures of food (Google images) glue</p> <p>Smiley face stickers, unhappy face stickers, variety of different fruits to observe and taste, magnifiers, camera</p>

Diet and digestion P4-6

Objective 1: To be able to recognise foods which are healthy and unhealthy.

Optional activities you might like to try include:	Resources:
<p>Pupils add smiley / sad faces to each other's favourite meals.</p> <p>Begin to sort different foods into simple groups e.g. fruit and veg, meat and fish, dairy, cereals</p> <p>Observe and taste a variety of vegetables, use magnifiers if appropriate. Take pictures as pupils try and use to make a display of favourite vegetables.</p>	<p>Range of different foods to those used before, simple food group labels variety of different vegetables to observe and taste, magnifiers, camera</p>
<p>Pupils add smiley/sad faces to prepared lunch boxes</p> <p>Talk about what might happen if they didn't eat or drink</p> <p>Explore different breakfast cereals e.g. feel them, smell them. Sort by colour, size, crunchiness, add some water or milk to cereal and watch changes and then taste.</p>	

Points to Note:

Pupils may think that sugar and fat are bad.

Be aware of the foods of other cultures appropriate to the class when selecting food samples

Be aware of any food allergies

If testing foods prepare in hygienic conditions

Diet and digestion P4-6

Objective 2: To explore how food is vital for energy, growth and health.

Descriptions of intended outcomes at different levels of attainment

- Imitates actions using their body for different foods (P4i)
- Shows interest in the foods and selecting junk foods (P4ii)
- Responds to simple scientific questions e.g. Can you show me a junk food? (P5i)
- Takes part in activities focused on anticipating moving in certain ways (P5ii)
- Responds to simple scientific questions requiring a more detailed response than P5 e.g. Can you find some junk foods? (P6i)
- Participates with less support e.g. knowing what actions to use for mimes more often (P6ii)

Possible Activities:	Resources:
<p>Try activities from P1-3 and talk about energy to move in different ways and keep us warm .</p> <p>Pupils watch film about babies and talk about what a baby needs to make it grow. How do they know when the body needs food? How do they feel when they are hungry?</p> <p>An average person living to 80 eats about 25 tons of food in a lifetime. This website lets you enter the number of slices of bread or eggs or bananas eaten in one day and works it out for a lifetime! http://channel.nationalgeographic.com/channel/human-footprint/consumption-interactive.html</p>	<p>Energy foods e.g. oils, margarine, bread, biscuits, pasta, yellow light, energetic music, CD player or IWB, speakers, internet access</p> <p>RV1: RV1: protein foods like meat, cheese. milk, fish, IWB, speakers, internet access</p> <p>RV2: : RV2: fruit, orange juice, vegetables, milk, rice, blue light, IWB, speakers, internet access, samples of 'junk' food and non junk food. Reply video and hold up a junk food every time they appear on the video</p>

Diet and digestion P4-6

Objective 2: To explore how food is vital for energy, growth and health.

Optional activities you might like to try include:	Resources:
<p>Try activities from P1-3 and talk about food to help us grow</p> <p>Pupils watch clip about different vitamins and mime some actions to it</p> <p>http://www.youtube.com/watch?v=5iS8h0J_Ows</p>	<p>Energy foods e.g. oils, margarine, bread, biscuits, pasta, yellow light, energetic music, CD player or IWB, speakers, internet access</p> <p>RV1: RV1: protein foods like meat, cheese. milk, fish, IWB, speakers, internet access</p> <p>RV2: : RV2: fruit, orange juice, vegetables, milk, rice, blue light, IWB, speakers, internet access, samples of 'junk' food and non junk food. Reply video and hold up a junk food every time they appear on the video</p>
<p>Try activities from P1-3 and talk about food to keep us healthy e.g. seeing well, pink gums, smooth skin</p> <p>Pupils watch clip</p> <p>http://www.youtube.com/watch?v=TWUq9PUYYLw</p> <p>about junk food and pick some junk foods out of a small range of foods</p>	

Diet and digestion P4-6

Objective 3: To explore the main parts of the digestive system and the process of digestion...

Descriptions of intended outcomes at different levels of attainment

- Communicates awareness of changes in digestion activities (P4i)
- Shows interest in the activities and aspects of digestion (P4ii)
- Completes a simple task with guidance (P5i)
- Identifies where changes have taken place (P5ii)
- Recalls the stages in modelling an aspect of digestion (P6i)
- Makes sensory based comparisons of the hands on aspects of digestion (P6ii)

Diet and digestion P4-6

Objective 3: To explore the main parts of the digestive system and the process of digestion.

<p>Possible Activities:</p>	<p>Resources:</p>
<p>Explore pushing different types of food down tights to model the food going down the food pipe. Help them see it is easier if food is in a ball shape.</p> <p>Also use tights to mimic the small intestine by filling with cooked oatmeal and squeezing so that some of the liquid oatmeal comes out of intestines. Take pictures or video what happens. Keep squeezing to get nearly all liquid out and you are left with 'poo'!</p>	<p>Tights, food to push down e.g. oranges, pasta shapes, cooked oatmeal and water, camera or video camera, newspaper to cover table</p>
<p>Optional activities you might like to try include:</p>	<p>Resources:</p>
<p>Try eating lying down – can they still swallow? An adult might like to do a handstand whilst eating!</p> <p>Listen to each others' guts with a stethoscope or microphone</p>	<p>Food to eat, stethoscopes or microphone connected to speaker</p>
<p>Make a stomach using a tough plastic bag and ingredients listed. Take pictures at the start and then let pupils squeeze and crush bag like a stomach and take pictures at the end. They can unzip the bag and squeeze 'stuff' out to resemble vomit!</p>	

Points to Note:

Pupils may think all inside is a hollow bag called the stomach that everything else is in.

They may also think that there are three pipes at the back of the throat (for air, food and water) and that there are two outlets at the end for urine and faeces

Diet and digestion P7-8

Objective 1: To be able to recognise foods which are healthy and unhealthy.

Descriptions of intended outcomes at different levels of attainment

- Sorts food into groups with help (P7i)
- Shows some understanding of simple scientific vocabulary related to food groups (P7ii)
- Sorts food into food groups with minimal help (P8i)
- Identifies foods with red, amber and green labels (P8ii)

Possible Activities:	Resources:
<p>Use Michael Jackson song 'Eat it' to learn and recall miming moves for each of the five food groups and what they do. http://www.youtube.com/watch?v=ZcJjMnHoIBI Words available here http://www.azlyrics.com/lyrics/weirdalyankovic/eatit.html and pupils could decide own mimes for certain foods.</p> <p>Make a meal on a paper plate or use meals from canteen and use flags to label the different groups</p>	<p>Song downloaded or on youtube. Copies of words , paper plates, pictures of different foods (Google images) or playdough to create pretend meal, flags with names of food groups and play dough to stand in.</p>

Diet and digestion P7-8

Objective 1: To be able to recognise foods which are healthy and unhealthy.

Optional activities you might like to try include:	Resources:
<p>Pupils sort plastic or real foods into food groups either use the scientific groups or go for simpler foods groups like fillers, meat/fish, fatty etc</p> <p>Prepare a range of different lunch boxes for pupils to label with flags</p>	<p>Plastic or real foods, labels or symbols for groups, flags with names of food groups, prepared lunch boxes containing different packed lunches</p>
<p>Label foods with red, amber or green labels e.g. green is OK to eat lots of, red – only eat small amount of it and amber – eat a medium amount</p> <p>Pupils make a class chart of favourite foods and drinks</p>	

Points to Note:

Pupils think you only get energy from sugar and only green foods are healthy.

Cocktails sticks can be sharp. Ensure that cocktail sticks are clean if labelling their own dinner.

Diet and digestion P7-8

Objective 2: To explore how food is vital for energy, growth and health.

Descriptions of intended outcomes at different levels of attainment

- Makes more detailed observations (P7i)
- Shows an understanding of some scientific vocabulary e.g. around vitamins and their deficiencies (P7ii)
- Starts to find vitamins on enlarged food labels (P8i)
- Observes changes in class practicals (P8ii)

Diet and digestion P7-8

Objective 2: To explore how food is vital for energy, growth and health.

Possible Activities:	Resources:
<p>Talk about what pupils think they need to stay alive. Show them an image of twins who have been on different diets. Show them images of people who have vitamin deficiencies and ask them to spot the problem.</p> <p>Tell pupils vitamins are given letters of the alphabet Look at some large food labels to see if they can see any vitamins listed.</p> <p>Listen to clip http://www.youtube.com/watch?v=5iS8h0J_Ows and hold up pictures of food</p>	<p>Images of people with vitamin deficiencies</p> <p>Food labels</p>

Points to Note:

Pupils often think that: Only sugary foods contain energy.

Notes:
 Image of twins separated at birth showing one fed a healthy diet and one a less healthy diet can be found in some science books and on Google images or use one from film Twins with Danny de Vito and Schwarzenegger

Images of people with vitamin/ mineral deficiencies can be sourced from Google images or books

- Vitamin A is retinol
- Vitamin B is complex and can be niacin, riboflavin, thiamine
- Vitamin C is ascorbic acid
- Vitamin D is calciferol

Objective 3: To explore the main parts of the digestive system and the process of digestion.

Descriptions of intended outcomes at different levels of attainment

- Makes simple record of activities e.g. using camera (P7i)
- Communicates their observations (P7ii)
- Begins to use words/ symbols for different process in digestion e.g. chew, squeeze, mix (P8i)
- Makes own observations of changes in the digestion models (P8ii)

Possible Activities:	Resources:
<p>Explore pushing different types of food down tights to model the food going down the food pipe. What do they notice?</p> <p>Also use tights to mimic the small intestine by filling with cooked oatmeal and squeezing so that some of the liquid oatmeal comes out of intestines. Take pictures or video what happens. Keep squeezing to get nearly all liquid out and you are left with 'poo'!</p> <p>Teacher models sections of the digestive system using a squishy human body model and encourages pupils to think of words to describe each process (e.g. chew, swallow, squeeze, chop, mix, soak up etc)</p>	<p>Tights, food to push down e.g. oranges, pasta shapes, cooked oatmeal and water, camera or video camera, newspaper to cover table</p>

Diet and digestion P7-8

Objective 3: To explore the main parts of the digestive system and the process of digestion.

Optional activities you might like to try include:	Resources:
<p>Model the digestive system as detailed in the resources list</p> <p>Pupils could draw around each other and try to place cut outs of the main organs in the digestive system</p>	<p>Mouth – pestle, mortar and blunt knife, Weetabix, water.</p> <p>Food pipe – sock and ball to demonstrate swallowing.</p> <p>Stomach – sandwich bag for mixing, broken biscuits, diced pepper, with food colouring and water for stomach acid.</p> <p>Intestines - tights and wet sponge (to show absorbing into blood) Lining paper, felt pens, cut outs of food pipe, stomach, intestines,</p>
<p>Pupils make a model of the digestive system using play dough, string etc.</p>	

Objective 3: To explore the main parts of the digestive system and the process of digestion.

Points to Note:

Pupils may think that what you eat is all egested or that inside is just one big 'bag'.

They may also think that there are three pipes at the back of the throat (for air, food and water) and that there are two outlets at the end for urine and faeces

Notes:

Stomach ingredients

¼ cup water

1/2 mashed banana

½ cup carrot, finely chopped

½ chopped red pepper

1 or two crackers, crushed

1/8 cup vinegar or lemon juice as stomach acid

1 tsp baking soda

Squishy human body from e.g.

<http://www.museumselection.co.uk/squishy-human-body-kit-prod10850/?>

[src=base&utm_source=googlebase&utm_medium=googlebase&utm_campaign=googlebase&gclid=cohuypm9v7ocfxcwtaodujcaba](http://www.museumselection.co.uk/squishy-human-body-kit-prod10850/?src=base&utm_source=googlebase&utm_medium=googlebase&utm_campaign=googlebase&gclid=cohuypm9v7ocfxcwtaodujcaba)

Diet and digestion L1-3

Objective 1: To be able to recognise foods which are healthy and unhealthy.

Descriptions of intended outcomes at different levels of attainment

- Uses senses to make simple observations when testing food (L1i)
- Identifies what has changed in the food tests (L1ii)
- Responds to prompts about what results can answer the question e.g. which crisps have most fat? (L1iii)
- Makes suggestions about how to find things out/ collect data in an investigation (L2i)
- Sorts and groups foods on the basis of food test results (L2ii)
- Ranks results in order (L2iii)
- Identifies one or more control variables in investigations (L3i)
- Makes systematic and accurate observations (L3ii)
- Uses straightforward evidence to answer questions and support their findings (L3iii)

Diet and digestion L1-3

Objective 1: To be able to recognise foods which are healthy and unhealthy.

<p>Possible Activities:</p>	<p>Resources:</p>
<p>Pupils to choose foods from a given selection to create a balanced and unbalanced meal. If appropriate justify their choices using scientific terms e.g. Healthy, unhealthy, diet, protein carbohydrate.</p> <p>Investigate which crisps have the most fat (use simple fat test by rubbing onto filter paper and seeing if translucent or if appropriate use the ethanol test). Decide best way to present results.</p> <p>Ask pupils to research which foods contain sugar, salt, or certain E numbers. Record as they think appropriate for L2 and 3: L1 pupils have prepared grid</p>	<p>Selection of foods for pupils to choose from. Coloured pens and a sample menu.</p> <p>Range of crisps, filter paper</p>
<p>Optional activities you might like to try include:</p>	<p>Resources:</p>
<p>Present pupils with an exemplar menu to make it healthier</p> <p>Carry out food tests for starch on different foods</p> <p>Make links to DT and design , buy and make a menu for a balanced 3 course meal.</p>	<p>Exemplar menus</p> <p>Range of foods to test, dilute starch solution, sampling tray/dishes, pipetteRef. CLEAPSS website for details of a practical investigation that is a simple method of observing colour changes associated with starch in foods.</p>
<p>Pupils to colour code their menus to show the different food groups.</p> <p>Investigate which crisps have the most salt – link to work on solutions and evaporation. Crush crisps in water well, filter and then evaporate the solution.</p> <p>Research what happens if people do not eat enough of certain food groups.</p>	



Diet and digestion L1-3



Objective 1: To be able to recognise foods which are healthy and unhealthy.

Points to Note:

Pupils may think that:

Diet is not eating;

Skinny/ thin is good or healthy.

Sanitise hands.

Aprons to protect clothing.

Starch test: you will need soda crystals (sodium carbonate) – teacher use only - for disposal of iodine solution at the end of the experiment - ref CLEAPSS

Diet and digestion L1-3

Objective 2: To explore how food is vital for energy, growth and health.

Descriptions of intended outcomes at different levels of attainment

- Shows an understanding of comparative language e.g. more, less, longer, shorter (L1i)
- Presents results in templates provided for them (L1ii)
- Recognises the basic features of food deficiencies in people (L1iii)
- Uses equipment correctly to make observations/ measurements e.g. thermometer, digital microscope (L2i)
- Presents results/ evidence in ordered way (L2ii)
- Makes basic comparisons between results of energy tests, DCPIP tests etc (L2iii)
- Selects equipment from that provided to address a question under investigation (L3i)
- Makes links between finishing temperature and the energy content of the foods (L3ii)
- Presents results in tables and bar charts (L3iii)

Possible Activities:	Resources:
<p>Pupils burn different samples of food.</p> <p>Talk about what happens when things grow and therefore the link to food. Show some images of deficiencies e.g. rickets, scurvy, goitre, pellagra and makes links to vitamins and minerals</p>	<p>tea lights, sand trays, metal tongs, matches, water, food samples, e.g. raisins, half a grape, marshmallows (small cooking variety), bread</p> <p>Ref. CLEAPSS website for details of a safe method for children to burn small samples and observe first-hand what happens when they are put directly into a naked flame</p> <p>Images of people with vitamin/ mineral deficient diseases</p>

Diet and digestion L1-3

Objective 2: To explore how food is vital for energy, growth and health.

Optional activities you might like to try include:	Resources:
<p>Sort foods into low energy and high energy foods by looking at labels. Some pupils could arrange in order from highest to lowest energy</p> <p>Test breakfast cereals to see if they contain a lot of iron. Crush the cereal finely in a plastic bag and then transfer to new bag and add water to make a paste. Use a strong magnet and move it all the way through the paste for several minutes. Carefully rinse the magnet in a bowl of water and then look at it under a digital microscope. There should be very tiny pieces of iron stuck to the magnet</p>	<p>Foodpackages and tins with labels or copy and enlarge labels so easier to see, range of breakfast cereals high in iron, plastic bags, rolling pins, water, strong magnets, digital microscopes</p> <p>Ref: CLEAPSS website for details of a practical activity describing how children can extract iron from breakfast cereal using a neodymium magnet.</p>
<p>Sort foods into ones vegetarians will eat and ones they won't. Then decide if those foods make a healthy diet.</p>	

Diet and digestion L1-3

Objective 2: To explore how food is vital for energy, growth and health.

Points to Note:

Some pupils may think that if a food does not ignite then it contains no energy or that only unhealthy foods contain energy.

Notes:

Be aware of pupils with allergies e.g. burning nuts

Ref. CLEAPSS website for details of a safe method for children to burn small samples and observe first-hand what happens when they are put directly into a naked flame.

Objective 3: To explore the main parts of the digestive system and the process of digestion.

Descriptions of intended outcomes at different levels of attainment

- Asks simple questions about digestion (L1i)
- Recognises the basic features of digestion e.g. chewing, squeezing etc (L1ii)
- Uses everyday terms to describe the features of digestion (L1iii)
- Draws on their observations to offer answers to questions about digestion (L2i)
- Makes comparisons between different parts of the digestive system (L2ii)
- Begins to sequence the main digestive organs (L2iii)
- Sequences the organs in digestion (L3i)
- Represents the digestive system using a model (L3ii)
- Uses scientific vocabulary to label digestive organs (L3iii)

Possible Activities:	Resources:
<p>Tape an outline of the digestive system to the floor and pupils walk through the process using correct terminology (teeth, stomach and intestine). Start in the mouth with a 'ball ' of food and at each point give a fresh 'ball' -pupils think of words to describe each process (e.g. chew, swallow, squeeze, chop, mix, soak up etc) and do that to the 'ball'</p> <p>Chew a piece of bread in mouth for a few minutes but don't swallow. The bread should begin to taste sweet as the amylase gets to work on the starch.</p>	<p>Tape, outline digestive system, 'balls' of food e.g. use bird fat balls</p>

Diet and digestion L1-3

Objective 3: To explore the main parts of the digestive system and the process of digestion.

Optional activities you might like to try include:	Resources:
<p>Model the digestive system as detailed in the resources list</p> <p>Pupils could create a mime/ dance action for each part of the digestive system.</p>	<p>Mouth – pestle, mortar and blunt knife, Weetabix, water.</p> <p>Food pipe – sock and ball to demonstrate swallowing.</p> <p>Stomach – sandwich bag for mixing, with food colouring and water for stomach acid.</p> <p>Intestines - tights and sponge (to show absorbing into blood)</p>
<p>Watch the video http://kidshealth.org/kid/htbw/DSmovie.html</p> <p>and then pupils try and sequence the order of the organs that food would go through (simple words such as mouth, foodpipe, stomach, guts) using cards</p>	

Points to Note:

Pupils may think that what you eat is all egested or that inside is just one big 'bag'.

They may also think that there are three pipes at the back of the throat (for air, food and water) and that there are two outlets at the end for urine and faeces

Be aware of allergies or gluten intolerance to bread