

Happy hens

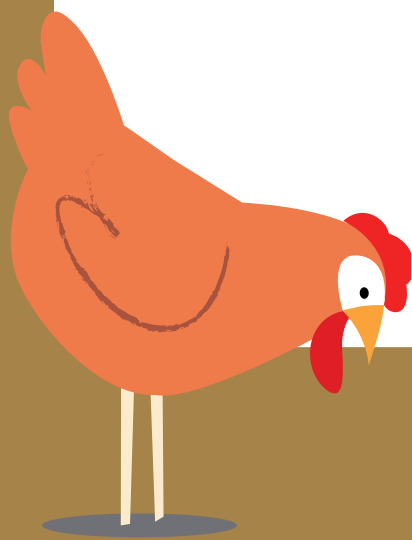
Introduction

These materials are intended to provide lesson ideas for Science, D&T, English and Literacy. The ideas and materials are suitable for children within the Foundation Phase and KS2 although some differentiation will be necessary for the youngest children. In particular, younger children will not be able to follow the written instructions on the pupil sheets. However, they should be able to manage the project work with support.

The materials focus on keeping hens for producing eggs.

Project overview

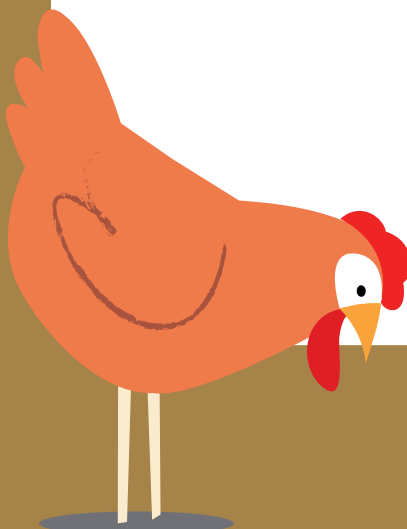
Stage	Time	Overview
1: Main presentation	10-15 mins	A presentation describing different types of egg farming and what hens need to flourish.
2: Practical work	20-120 mins	There are two practical activities relating to keeping hens. Along with the presentation, these support children with information helpful for them to design an environment for a flock of 100 laying hens. Activity 1: In this activity, children learn about features of a good hen feeder. They then make and test a model hen feeder using craft materials. The feeder uses rice to model food pellets. Uncooked rice is harmful to hens because it swells up in their stomachs. Please mention this to the children. Activity 2: In this activity, children learn about water dispensers. They make and test a model water dispenser using a glass tumbler and dish.



Presentation notes

These notes also appear on the PowerPoint 'notes' pages.

Slide 2: Types of egg-farming	For eggs to be classed as 'free-range', the hens must have access to the outdoors. Flocks may be up to 32,000 hens. Organic free-range eggs must be produced by hens in a flock size of 3,000 or fewer hens that have access to organic land and be fed an organic diet. The photograph at the top of the slide is an idealised depiction of free-range hens. Barn eggs are produced by hens that remain indoors but can roam freely within the barn. Colony caged hens remain in wire cages.
Slide 3: What do hens need?	Hens have similar needs to most animals (including humans). They need shelter from the weather and predators, space within the shelter and outside, water and food containing the right nutrients.
Slide 4: Features of a good henhouse	Self-explanatory
Slide 5: Features of a good chicken run	A chicken run is designed to enclose the chickens whilst giving them space to move around and forage. This prevents them from wandering too far away or falling prey to predators such as foxes. It also prevents them from using 'secret' places to lay their eggs.
Slide 6: Food and drink	A hen's diet must include the correct nutrients, vitamins and minerals. Grit helps hens to digest food. Oyster shells contain calcium carbonate which is needed to make eggshells. Egg-producing hens need a high protein diet and lots of water. Hen feeders are designed to provide a continuous flow of food whilst avoiding spoilage. Water dispensers are also designed to provide a continuous supply of water without spoilage.
Slide 7: Can you design a hen-house to keep hens happy and safe?	A stimulus picture to start children thinking about what a henhouse for happy hens might look like.



The activities

Activity 1: Hen feeders

Suggested equipment and materials:

Student sheet, shallow dish (such as a petri-dish) or cream or yoghurt pot with a base diameter of about 8-10cm, kitchen roll tube, PVA glue or hot glue gun, scissors, cocktail stick, string or thread, scissors, rice.

Activity overview:

In this activity, children learn about features of a good hen feeder. They then make a model hen feeder using craft materials and test it. The feeder uses rice to model food pellets. Uncooked rice is harmful to hens because it swells up in their stomachs. Please mention this to the children.

The shallow dish needs to be about 1.5 to 2cm deep. Children may need help to cut the cardboard tube and cream/yoghurt pot.

As an extension activity, you could challenge children to improve the feeder design, and then make and their improved feeder.

Safety guidance

Children must not use a hot glue gun as the glue is molten plastic at about 200°C and can give nasty burns. Younger children will need help to cut cream or yoghurt pots.

Activity 2: Water dispensers

Suggested equipment and materials:

Student sheet, glass tumbler or narrow jam-jar, shallow dish (such as a petri-dish) or cream or yoghurt pot with a base diameter of about 8cm, supports (you could use large buttons or pennies), dropping (teat) pipette, cloths to mop up spills.

Activity overview:

In this activity, children learn about water dispensers. They make and test a model water dispenser using a glass tumbler and dish. As an extension activity, you could challenge children to improve the water dispenser design, and then make their improved version.

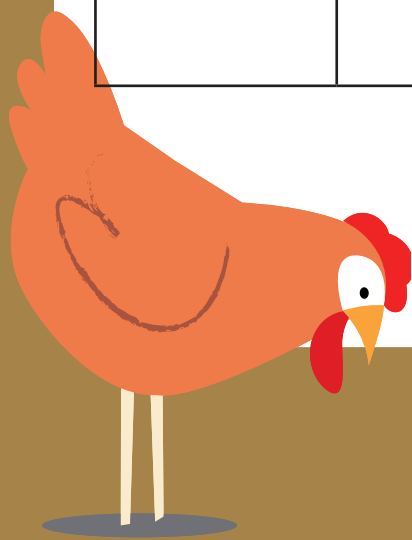
Safety guidance

Glass tumblers are easily broken, and children should be warned against clearing up broken glass. You may wish to consider using plastic 'glasses' or beakers if available. The dishes need to be at least 3cm wider than the tumbler. Younger children will need help to cut cream or yoghurt pots.



Possible links to the Welsh curriculum

Stage/subject	Topic	Welsh Curriculum statements
Foundation Phase: Learning and Understanding of the World	Range	• Work on their own and in pairs and small groups • Observe differences between animals and plants, different animals, and different plants in order to group them • Learn about the senses that humans and other animals have and use to enable them to be aware of the world around them • Identify some animals and plants that live in the outdoor environment • Identify the effects the different seasons have on some animals and plants.
	Skills	• Exploring and experimenting • Thinking about questions and then asking them and listening to the answers • Listening to others' ideas • Thinking about what might happen if... • Thinking creatively and imaginatively • Thinking about how they will know if something has worked • Communicating observations and measurements • Describing what they have found out and offering simple explanations • Expressing their own opinions and feelings, and making decisions while considering the viewpoints of others • Reflecting on and evaluating their own and others' work.
Foundation Phase: Mathematical Development	Reception	• Identify steps to complete the task or reach a solution • Use 2D and 3D shapes to make models and pictures • Use 2D and 3D shapes and describe how they fit together • Make increasingly more complex or accurate models with 3D shapes and tessellate 2D shapes
	Year 1	• Use direct comparisons with: – length, height and distance, e.g. longer/shorter than – weight/mass, e.g. heavier/lighter than – capacity, e.g. holds more/less than • use 2D and 3D shapes to make models and pictures
	Year 2	• Use non-standard units to measure: – length, height and distance – weight/mass – capacity • use 2D and 3D shapes and describe how they fit together • Use standard units to measure: – length, height and distance: metres, half metres or centimetres – weight/mass: kilograms or 10 gram weights • Make increasingly more complex or accurate models with 3D shapes and tessellate 2D shape



KS2: Science	Skills	- Pupils follow the planned approach/method, revise it where necessary, and where appropriate: use apparatus and equipment correctly and safely; make careful observations and accurate measurements; check observations and measurements by repeating them in order to collect reliable data; make comparisons and identify and describe trends or patterns in data and information; use some prior knowledge to explain links between cause and effect when concluding - Pupils think about what they have done in order to consolidate learning and transfer skills, knowledge and understanding to other contexts by: beginning to evaluate outcomes against success criteria; deciding whether the approach/method was successful; describing any amendments made to the planned approach/method; suggesting how the approach/method could have been improved; describing how they have learned and identifying the ways that worked the best; linking the learning to similar situations, within and outside school.
KS2: Design and Technology	Skills	- Pupils should be given opportunities to: use a range of information sources to generate ideas for products; investigate how existing products look and function as a source of ideas for their own products, e.g. examine a range of products related to their task, toys, healthy eating; develop a simple specification/recipe for their products indicating their intentions and approach; demonstrate their creative thinking when considering and recording solutions to problems that arise during their designing and making, e.g. realise that it would be quicker and easier to use ready-made materials, components and ingredients rather than make their own; develop and communicate their design ideas in a variety of ways, using ICT and models where appropriate - Consider the safety, reliability and sustainability of their activities/products, e.g. consider how use or misuse of their products might cause injury, damage or poor health; evaluate their design ideas as they develop, considering the needs of the user - Pupils should be given opportunities to: work to their specification/recipe to make products; choose appropriate materials, ingredients, equipment, tools/utensils and techniques, from a range made available to them; measure, mark out, cut, shape, join, weigh and mix a range of materials and ingredients, using appropriate tools/utensils, equipment and techniques; find alternative ways of making if the first attempt fails; apply appropriate finishes to their product

Useful links

British Egg Industry Council <http://www.britisheggindustrycouncil.co.uk/about-us/>

Egg info - everything from nutrition and health news to the story of the British Lion scheme and more <https://www.egginfo.co.uk/>

RSPCA <https://www.rspca.org.uk/adviceandwelfare/farm/layinghens/farming>

Compassion in World Farming <https://www.ciwf.org.uk/farm-animals/chickens/egg-laying-hens/>

