

## 14 January 2013 - Computers in Agriculture

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Discovering Our Countryside provides a clear, interesting and informative picture of the important role of agriculture and rural affairs in the lives of pupils from an early age, the films and commentaries have been developed specifically to enhance the work that you are doing in your own classrooms.

These are the scripts and associated teaching links and notes for the program of 14 January 2013

### Teaching links.

Below are this program's specific links to:

- National Curriculum
- The 9 Eco School topics.
- National Government initiatives:
  - Healthy Schools
  - Sustainable Schools
  - Every Child Matters
  - Learning Outside the Classroom
- Thinking Skills.

#### *Note on National Curriculum links*

*The National Curriculum subjects and the units from the QCA schemes of work. (Rather than list each specific National Curriculum objective we have simply listed the QCA Units as these are already linked to the National Curriculum and are generally what schools reference when planning work.)*

These will allow you to easily link each program into your existing work.

The programs can also be used to promote interaction by children in pairs and groups, circle time or class discussion, encouraging learning through discussion and interaction

Discovering Our Countryside is a modular approach to rural affairs - we hope you and your pupils will look forward to each new episode as it paints the picture of the rural environment and it's seasonality.

Specific links for this weeks program sections:

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### Details of this program

This program looks at how cycles and re-cycling is an important part of farming.

- **Farm Animals and Computers** – Shows how computers are used to monitor pigs feeding during pregnancy and also how they are used to help farmers weigh ingredients so they can mix the correct food ingredients for cattle. It also shows how even milking cows and goats is helped by the use of computer to monitor how much milk is produced.
- **In your local Greenhouse** – Shows how machines are used to plant seeds then how computers and robots are used to then sort the growing seedlings. It also shows how human input is still needed for many jobs that computers cannot do – yet!
- **A year in a wood** - we start our regular look in a wood. This program looks at what happens to the leaves which fall from the trees in Autumn and shows you how you can investigate the mini-beasts on leaf litter

These sections can also be found on the relevant topic page, which over the weeks will build up the seasonality picture for each of the main themes: Crops / Arable; Livestock; Wolds Heritage

### NATIONAL CURRICULUM SUBJECTS LINKS.

#### Design and Technology KS 1 + 2

Looks how farmers use modern technology to grow crops and provide fresh 5-a-day produce

Give examples of different vehicles and also how the wheat is grown which is milled to make flour to bake bread and biscuits.

#### *Relevant QCA Schemes of Work*

Unit 1c Eat More Fruit and Vegetables

Unit 2A. Vehicles

#### Science KS 1 + 2

The videos have lots of science links to the units listed below for example:

Shows the start of plants life cycles and what parts of a plant we use and harvest.

Looks at how we can help bees so important to many of the plant food crops we rely on

Some of machinery could be used to discuss pushes and pulls.

#### *Relevant QCA Schemes of Work*

Unit 1B. Growing plants.

Unit 1E Pushes and Pulls.

Unit 2A Health and Grow.

Unit 2B Plants and Animals.

Unit 3B. Helping plants grow well.

Unit 5B. Life cycles.

Discovering Our Countryside - Teachers Notes

These are just the links we thought of – please let us know if you make any more!

## Citizenship KS 1 + 2

E.g. Shows how farmers look after animals.

### *Relevant QCA Schemes of Work*

Unit 3 Animals and Us

## ECO SCHOOL TOPIC LINKS

With apologies if we are ‘teaching grandma to suck eggs’ here are some of our thoughts on how our videos link to the Eco School Topics

Showing pupils just which of their food products are grown in this country will give them important background knowledge when discussing transport, energy and global perspective of food production and the healthy living choices they make when they go to the shops.

- Energy
  - Growing food and the associated energy costs of buying home grown food or imported food
- Water
  - Use of water to grow plants
- Biodiversity
  - How growing studying local habitats and where pest are found can help local biodiversity
- School grounds
  - How the simple act of hunting for mini-beasts can help build up a picture of the school grounds in preparation for the design and creation of new features in your school grounds
- Healthy living
  - How growing your own produce can promote healthy living by promoting a healthy diet and also promoting exercise in the act of growing that produce. The improvement of school ground can also aid mental well being.
- Transport
  - Reduce transport costs of food by growing your own local produce.
- Litter
  - When carrying out gardening tasks introduce children to tidy habits – pick up all packaging and dispose of ‘thoughtfully’ – see waste
  - When outside be it school, garden or countryside “Take only photos Leave only footprints!”
- Waste
  - Explain that gardening and farming is and always has been synonymous with recycling. Re-use seed trays, compost is made from last years ‘recycled’ plants. Think twice about where to put litter – bin or recycle?
- Global citizenship
  - Explain how even the little things we do – where how food comes from, how much we recycle, our biodiversity, can affect the whole world be it good or bad!

**COMPUTER IN AGRICULTURE: SCRIPT****INTRO**

*Computers are everywhere....*

**FARM ANIMALS AND COMPUTERS**

*Many farm animals like these pigs are monitored by computers*

*These sows are hopefully pregnant*

*A sow is pregnant for 3 months, 3 weeks and 3 days = about 114 days....*

*The farmer scans them with this mini-computer called an ultra-sound scanner to see if they are pregnant - can you see the outline of the baby pigs on the scanner....*

*Once he knows they are pregnant then the farmer will monitor what they eat. This is done with a computer.*

*As the sows go into this feed station the computer reads their special ear tag and gives them the amount of food the farmer has told the computer they need for the particular stage of their pregnancy.*

*Computers are even used to help farmers feed cattle while they are housed.*

*The farmer mixes them a diet in this feed mixer and can tell how much of each ingredient to add thanks to the computer showing him the weight as the ingredients are added.*

*These beef cattle are being feed a diet which has been made to help them grow and be healthy*

*Computers are even used in milking parlours*

*The white stuff*

*6 million of these are sold in the UK each day – some of it drunk by you.....*

*That's enough milk to fill 41 swimming pools....*

*Milk usually comes from cows but it can also come from sheep or goats.*

*Do you know how Milk is produced and gets into the cartons?*

*Cows which produce milk are usually black and white and either the Friesian or Holstein breed*

*Animals kept for milk are referred to as Dairy Animals*

*Cows eat mainly grass which they turn into milk.*

*Each cow can produce 20 litres of milk – that's this many containers, in ONE DAY*

*Dairy animals are milked daily sometimes 2 or 3 times a day.*

*They go into a milking parlour to be milked.*

*Some milking parlours are like a roundabout like this one where goats are being milked.*

*When animals first enter the milking parlour the farmer cleans their udders – this is to help stop bacteria getting into the milk.*

*Milking does not hurt the cows, in fact cows are happy to be milked as they can get rid of the weight of milk in their udders - could you carry these around all day?*

*Some cows even start to release milk before the farmer has put the milking machine on*

*Once the udders are clean the farmer then continues with the milking process*

*This is called the milking cluster – it is put on the animals udder and gently squeezes the milk out.*

*The milk produced by each animal is carefully measured and recorded by a computer*

*The cows are then feed a diet which keeps them healthy and accounts for how much milk they have produced*

*Once all the milk has been squeezed out the cluster releases automatically and the animal leaves the parlour*

*The milk goes into a special cooling tank where it will be stored until it is picked up by a tanker lorry.*

*We will see what happens to the milk in another program*

### **IN YOUR LOCAL GREENHOUSE.**

*The seeds for your summer vegetables are being planted....*

*The seeds are planted into a compartment in these trays by this machine.*

*This is tomato seed pelleted in clay to make handling such small seeds easier.*

*The planting machine puts 1 pelleted seed in each compartment.*

*The seeds are then covered in a special material called vermiculite and then put in a germination room where the conditions are controlled to help the seeds germinate.*

*After 3 days the trays are moved to the greenhouse and the seedlings emerge*

*Once the seedlings are growing strongly they are sorted according to size by a computer and robot into small, medium or large*

*The robot picks each plant up and places it in a pot for the computer to take a picture of.*

*The computer then controls where each plant goes and instructs the robot to pick these sorted plants up and put them on the relevant tray. Sorting them by size helps the grower produce the most even crop of healthy strong plants – the small ones can be grown on longer before the next stage.*

*Once they reach the right size the plants are pricked out into larger rock wool pots, which are soaked with water first*

*The pricked out plants are put back in the greenhouse to grown some more.*

*As they grow the plants take up more space so they are spaced out so that they do not have to compete for the light which makes them grow. This is what these girls are doing here.*

### **YEAR IN A WOOD - INVESTIGATING LEAF LITTER**

*This year we are going to be following a wood to see how it changes through the seasons and how woods are managed just like most of the rest of our countryside.*

*Here's the wood we will be following this year.*

*You may think woods are very quite and nothing much is happening in winter*

*Well certainly some trees have lost their leaves so cannot make their own food by photosynthesis*

*The trees which do loose their leaves are called deciduous trees*

*Lots of things are happening which are important for the new spring leaves and growth in the wood*

*The leaves which cover the wood floor are under attack from mini-beasts, fungi and bacteria*

*This attack means the nutrients which are locked up in the leaves are released into the soil for the tree to absorb through its roots again - they are being recycled.*

*If you take a walk in the woods you may see some of the fungi which break down the leaves and other dead plant material to recycling the nutrients inside*

*If you collect some of these leaves you could hunt through them to find some of these mini-beasts*