





SOIL, alongside AIR and WATER, is one of the world's three major natural resources



Soil Drivers

Cranfield

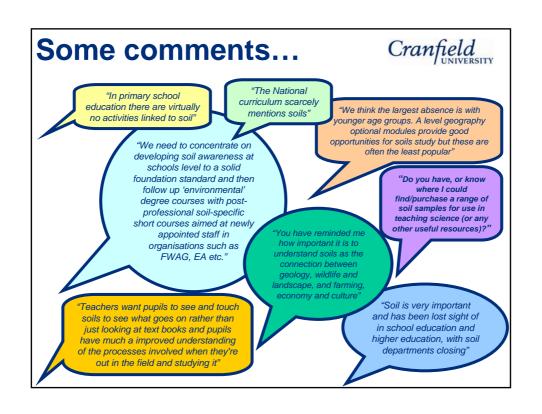
Deficitive One, "Defra will work with stakeholders to develop a programme of education and awareness of soil issues among the general public, those working with soils and the professionals that quide, advise or

UK Environment and garde, david and Wales instruct soil managers."

Healthy soils are vitating signs that their control soil loss and dama managed sustain to keep them healthy for future generations.

WK DEFRA The First Soil Action Plan for England (5/04)
Soil is one of the essentials of life, along with air and water. Yet it is so much a part of everyday life that there's a danger of taking it for granted. Covering most of the earth's land surface, it is the essential growing medium for our food, timber and other crops. It supports the buildings that we live and work in and the roads and rails that move us around.

Key Stages		Cranfi	eld	
Key Stage	School Years	Children's Age	es	
Primary	1 and 2	5 to 7	SATs	
2	3, 4, and 5	7 to 11	SATs	
Secondary <	7, 8 and 9	11 to 14	SATs	
4	10 and 11	14 to 16	GCSE	



Where's the Soil ???



Geography

- > geographical enquiry and skills
- > environmental change and sustainable development

> Science: life processes and living things

- > variation, classification and inheritance
- > green plants as organisms
- > living things in their environment

Science: materials and their properties

- acids and bases
- > geological changes



Where's the Soil ???



History

- > settlements, events, people and changes in the past
- historical interpretation

Citizenship

> responsible living

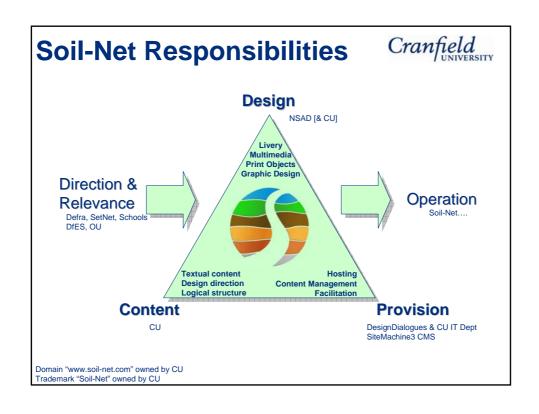
> ICT

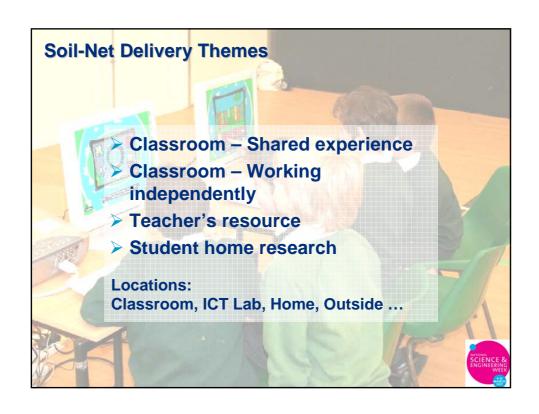
> environmental data

> Art and Design

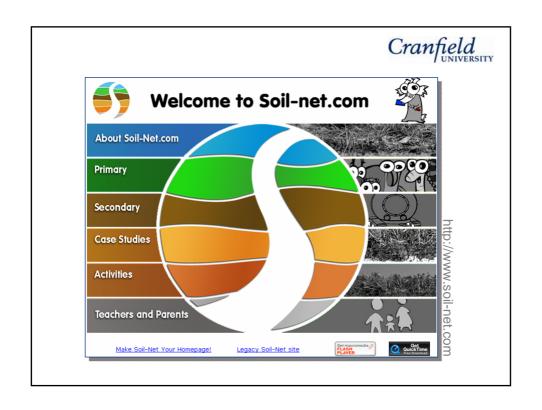
- > texture, natural forms
- mother nature designer



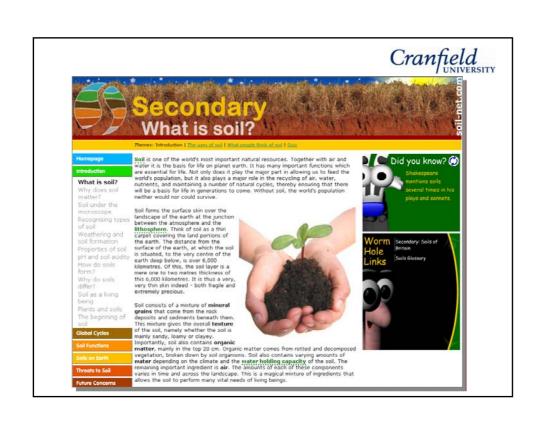


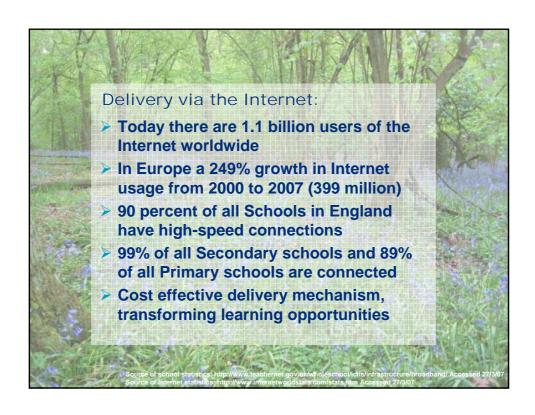


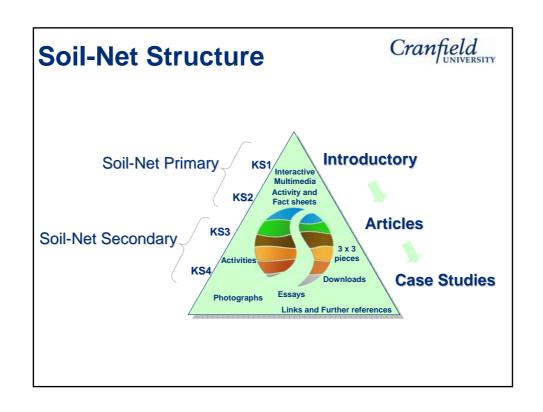
Cues:	Visual, audio, timings, pace
Cast:	Consistent naming, voicing, character and appearance
Appearance:	Colour schemes, icons, layout, CSS styles
Typography:	Font styles
Navigation:	Consistency, accessibility issues
Printing:	Print objects and templates
Language:	Key Stage language, semantic guidance, vocabulary
Learning:	Didactic guidance, evidence-based approach (practical and effective activities)
Structural:	File/folder naming conventions

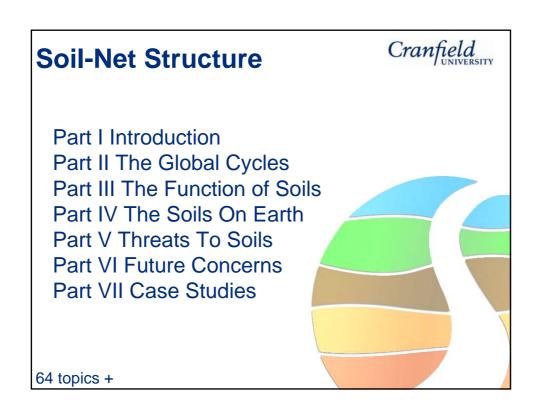




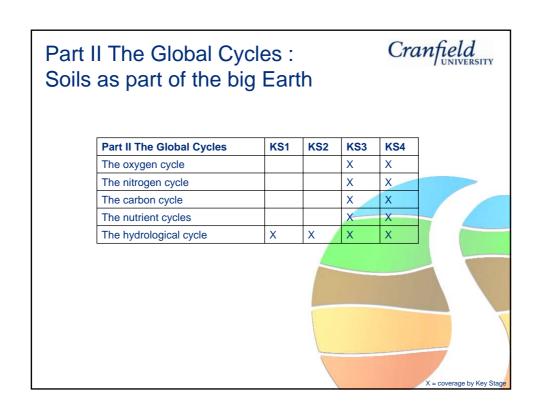




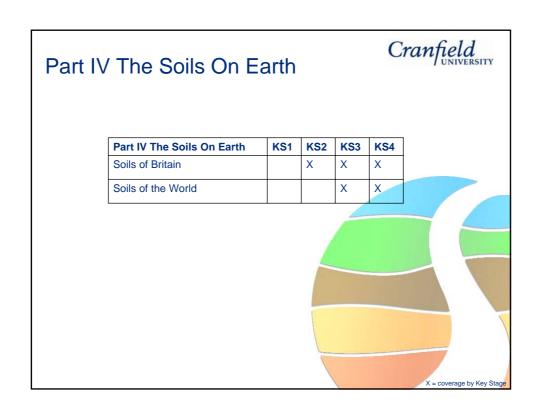




I Introduction				•
Part I Introduction	KS1	KS2	KS3	KS4
What is soil?	X	Х	Х	Х
Why does soil matter?	X	Х	Х	Х
Soil under the microscope	X	X	X	Х
Recognising types of soil			X	X
Properties of soil	X	X	Х	X
How do soils form?	X	X	Χ	X
Why do soils differ?	X	Х	Х	Х
Soil as a living being	X	Х	X	Х
Plants and soils	X	X	Χ	X
The beginning of soil	X	X	X	X
				7



III The Function of Soils			Cri	anf
Part III The Function of Soils	KS1	KS2	KS3	KS4
Farming and food production	Х	Х	Х	Х
Forestry – from the taiga to the tropical rain forest. Commercial forestry	Х	Х	Х	Х
Ecology - biodiversity, habitat, composition, development, diversity	Х	Х	Х	Х
Soils and Water – absorption and storage, flow and waterlogging	Х	X	X	X
Land reclamation – soils and pollution control	A	Х	Х	X
Soils and infrastructure – building on soil		Х	Х	X
Soils and archaeology – our buried past		Х	Х	X
Soils and climate change		X	X	X
Soils and health	Х	Х	Х	X
Land quality and planning – optimising soil use		Х	Х	X
Soils and gardening	X	Х	Х	Х



Part \	art V Threats To Soils		Cranfield			
	Part V Threats To Soils	KS1	KS2	KS3	KS4	
	Soil erosion			Х	Х	
	Desertification			Х	X	
	Acid rain			Х	Х	
	Fertilisers			Х	X	
	Pollutants			X	X	
	Deforestation			Х	X	
	Impacts on biodiversity	-	2	Х	X	
	Climate change	X	Х	Х	X	
	Salinisation			Х	X	1
	Loss of organic matter			Х	X	
	Acidification - and the release of toxic metals			Х	X	
	Compaction - and the loss of soil structure			Х	X	
	Building on soils - and soil sealing			X	X	

Part VI Future Concerns	KS1	KS2	KS3	KS4
Population and food – feeding a growing world population		Х	Х	Х
Population and infrastructure – soil sealing and its impacts		Х	Х	Х
Climate change impact on soils	Х	X	X	X
Soil quality and the sustainability - land use systems		Х	X	Х
Managing water resources	AL	Х	Х	Х
Food safety and health		Х	X	Х
Waste disposal		Х	X	X
Loss of biodiversity		Х	X	X

Part VII Case Studies	KS1	KS2	KS3	KS4
Farming and food production				Х
Forestry				Х
Ecology				Х
Soils and water				Х
Land reclamation				X
Soils and infrastructure				Х
Soils, history and archaeology				X
Soils and literature				X
Soils and climate change				Х
Soils and health				X
Land quality and planning				X
Soil and gardening				X
Threats to soil	V I			Х
Properties of soil				Х
Soil techniques, equipment and technologies				X

Online Quizzes



Quiz	Attempts	Mean score (%)
Secondary_Intro_What	15	76.9
Secondary_Intro_Matter	7	80
Secondary_Intro_Microscope	9	86.7
Secondary_Intro_Properties	19	81
Secondary_Intro_Formation	6	73.3
Secondary_Intro_Differences	7	94.2
Secondary_Intro_Livingbeing	9	68.9
Secondary_Intro_Plants	20	94
Secondary_Intro_Colonisation	4	65
Secondary_Cycles_Oxygen	5	77.8
Secondary_Cycles_Nitrogen	4	81.5
Secondary_Cycles_Carbon	10	79
Secondary_Cycles_Nutrient	1	88
Secondary_Cycles_Hydrology	1	100

Secondary_Functions_Farmingandfood	4	75
Secondary_Functions_Forestry	9	87.8
Secondary_Functions_Ecology	4	94
Secondary_Functions_Ecology_Leaves	20	79.5
Secondary_Functions_Soilwater	5	92
Secondary_Functions_Reclamation	1	88
Secondary_Functions_Infrastructure	2	94
Secondary_Functions_Archaeology	5	77.6
Secondary_Functions_Climate	1	63
Secondary_Functions_Health	2	94
Secondary_Functions_Foodprod	2	90
Secondary_Functions_Garden	8	84.5
Secondary_Soilsonearth_Britain	10	86.4
Secondary_Soilsonearth_World	10	60.2
Secondary_Threats_Erosion	3	58.3
Secondary_Threats_Desertification	2	100
Secondary_Threats_Acidrain	1	25
Secondary_Threats_Fertilisers	1	38
Secondary_Threats_Pollutants	1	13
Quiz_WhosePoo.swf	44	82.8



Activities and Downloads



Soil-related activity sheets – 50+ activity sheets and resources for all ages, presented by Key Stage.

Desktop wallpaper - 'green-screen' images.

The school garden - how to start and manage a school garden.

Soil walks - take a virtual online soil walk.

Terrain builder - an erosion simulator. Design a landscape and let the water flow!

Eco-Lifestyle Quiz - an 'eco schools' resource. Check the impacts of your lifestyle on the environment.

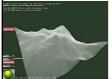
SoilScapes Interactive mapper - online soil mapping for England and Wales. Enter your Postcode to see the soils near you.

Whose Poo? - you just have to find out!

Wormery - study worms and learn about what they do!

Soil-Net Primary fileset - for offline use.

Soil-Net Photo Library - over 2,400 high quality environmental images for royalty-free classroom use.

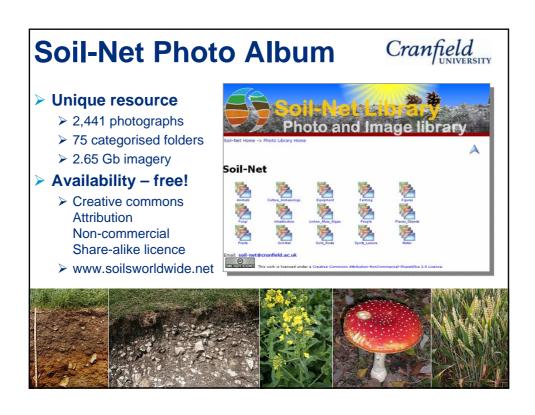


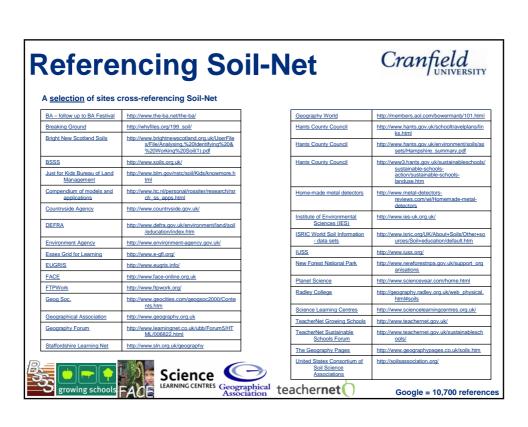






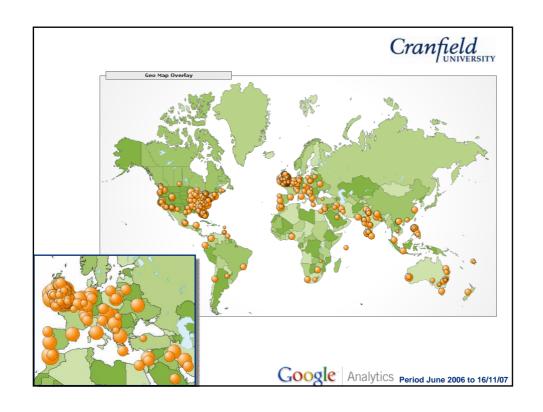


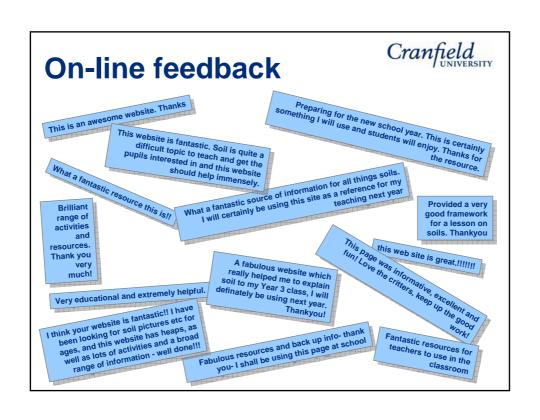




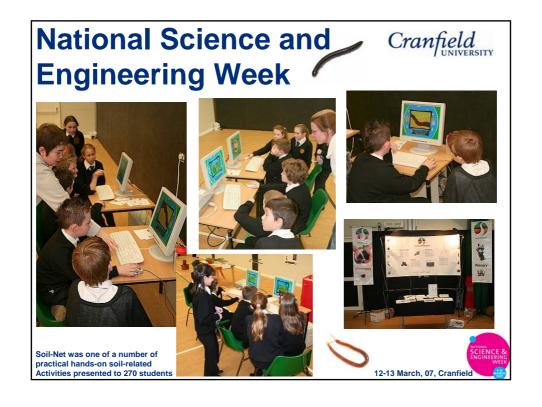


Cranfield **Web Statistics** Top Referring sources (direct) / (none) **40,549** unique 11,637 google / organic 1,314 soils.org.uk / referral visitors, averaging 1,213 yahoo / organic 1.062 76 unique persons en.wikipedia.org / referral 620 kented.org.uk / referral visiting each day images.google.co.uk / refe 533 **293,476** page blm.gov / referral impressions served clc.esf.edu.hk / refer 433 eelink.net / referral 430 up (pages viewed) on monitored pages 249 www3.landis.org.uk / refe school-portal.co.uk / re 244 198 geotech.org / referra Country of Origin Visits search / organic silsoe.cranfield.ac.uk / referral 8,611 United States India 1,237 Period June 2006 to 16/11/07









The future?



'<u>Future Sustainability</u>' there needs now to be a plan in place to manage and nourish the existing web resource. Effective educational web resources are dynamic entities which are able to change to reflect changing needs and requirements and also to reflect contemporary issues. Existing curriculum linkages need to be maintained, developed and tended and mailing lists administered. Further case-studies on topical and contemporary subjects can be presented. Linkages to the artistic services supplied so ably by the NSAD partners should be preserved in place for such developments also.

'Promotional Campaign' there needs to the means to retain Soil-Net's place in the 'spotlight' and incorporating the seeking of cross-linkages with other Defra and DfES initiatives and relevant web resources (to elevate the standing of Soil-Net in search index listings, contacts with teachers and potentially select demonstrations and attendance at key educational assemblies and conferences). Various promotional opportunities are emerging at the BBC, for instance their 'Planet Relief' and 'Breathing Spaces' initiatives. The Soil-Net team need resources to pursue and realise these potentially highly significant opportunities. Sustainable Schools and Eco-Schools are two relevant initiatives.

The future?



'16-19 age group' undertaking 'A Level', and the <u>Vocational Qualifications</u>. There are other audiences to extend the Soil-Net message to. Comments from online users and teachers reflect this demand – for subjects such as environmental science and geography and horticulture as well as other land-based industries. Such developments could coincide with a more formal integration of the materials of the DfES "SoilWorks" initiative.

'Soil Walks' Combine the idea of soils education with that of 'healthy living' and other outdoor activities where children can have outdoor learning experiences about soils. This is directly consistent with initiatives such as 'Healthy Schools' and the BBC's 'Breathing Spaces'. Suitable walks from around the country could be collated (perhaps drawing upon those such as the Field Studies Council) and soil elements added to walking guides.

'<u>Translation</u>' Convert the Soil-Net text to other European languages. This will necessitate more than simple translation. As appropriate curriculum maps and semantics within the text will need attention – but a very achievable task!

