

KS3 & KS4
½ day
options

Sparsholt Schools' Centre for Environmental Education

Select 2 or 3
options for
1 full day!

KS3 and KS4 Science & Geography – a summary of ½ day options

Intensive farming - cows or pigs	Pollution! - water quality & biological indicators
Visit an intensive dairy or pig unit and consider welfare & food production issues. How does farming affect the environment or cause pollution? Milk a cow, touch a calf, stroke & weigh a piglet! Consider: lifecycles (selective breeding); energy flows & food chains ; piglet growth rates and waste materials!	The lake is supplied by water from our fish farm – does this mean it's polluted? Assess the quality of the habitats & water supply . Measure physical factors (temp, oxygen, pH, nitrates, clarity) and/or sample for biological invertebrates (April – Oct). Build food chains and webs, consider interdependence .
Microbiology & bacteria - bringing <i>Semmelweis</i> to life!	Something fishy! - adaptation to environment
Become a microbiologist & practise aseptic techniques (serial dilution, plate inoculation) at the College's microbiology* lab. Why is hand washing important? How <i>clean</i> is Sparsholt Milk? Which antibiotic is effective against SA? Prepared plates are usually incubated/counted at school. *Higher fees apply for lab use	Explore variation and adaptation using our acclaimed National Aquatics Training Centre. Visit fish from all over the world, find 'Nemo' and his friends and discover how and why they are suited to their environments. Watch out for the blind cave fish, the lungfish, archer fish, catfish and piranhas!
Organic farming - benefits and costs?	Gone fishing! - fish farming for food production
How do conventional farms like Sparsholt operate? Compare this to case studies of organic farms. Investigate good practice for intensive and non-intensive systems. How are the animals selected to breed? Is the system sustainable? What are the welfare issues? Visit the pigs and/or cows to find out.	Visit the fish hatchery and see/touch our brown & rainbow trout. Be prepared to get splashed! Which fish is best to eat and why? Measure the water quality at 5 sites around the hatchery and lake: is the water clean? All our food fish are female – find out how they reproduce (spawning Dec/Jan)
The secret life of soils	The tropics - biodiversity and terrestrial habitats
Investigate soil - the most important natural resource in the world! Test soils in different locations for pH, texture & living things! What is the human impact of farming on soils? How can farmers improve soil? Investigate micro-organisms in soil.	Explore a rainforest habitat in the tropical house and compare with a temperate one. Investigate food chain links and see amazing plant adaptations. Visit mature woodland & meadow habitats. Sample plants & animals (transect & quadrats).
Magic manure & lovely landfill	Sustainability - human impact
Investigate how nutrients (carbon, nitrogen) are recycled & the role of microbes. Visit cows or pigs to find out how animal waste is recycled. Auger & test farm soils. Explore bio/non-biodegradable materials using our mini landfill site. Get your hands on decomposers and make your own recycled paper.	Explore human impact on the environment and how to reduce it. Investigate food miles, carbon footprint & climate change issues for food production & waste (compost, landfill, worms & manure). Complete an energy audit of the site & investigate renewable energy: wind & solar. Could the farm use biogas?
Selective breeding - what, why and how!	Lifecycles & growth - meet the family!
How is selective breeding carried out at Sparsholt (pigs, cows, sheep or fish!). Consider the advantages/disadvantages of natural vs. selective breeding? Is it ethical? Is it sustainable?	Explore & compare life cycles, growth & reproduction of a variety of animals including sheep (chance to see live births in Jan/Feb) calves (Nov-April) and piglets (all year).
Crops, cultivation and conditions for growth	Geographical & scientific fieldwork techniques
Measure growing conditions (light, humidity, temp) around the farm, including the tropical house. Discover what plants are grown and how they are cultivated. Auger & test soils and consider use of fertilisers, herbicides & pesticides.	Design your own investigation using our expertise & equipment to help you collect a wide variety of geographical & scientific data. Suitable for students designing their own fieldwork investigations and fieldwork data collection.

- ½ day options are £90 per session for a single group (25 pupils) or £80 per session for block bookings (>2 sessions).
- Larger groups (up to 50) can be booked for ½ day sessions, however dates are limited and higher fees will apply.

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Sparsholt Schools' Centre	KS3		KS4	AQA				OCR			Edexcel	
½ day options	Science	Geog	GCSE Geog	Science A	Science B	Additional science	Additional Applied science	21 st C Science (A)	Gateway (B)	Additional Applied Science	GCSE Science	BTEC Applied science
Intensive farming: cows or pigs	👍			B1.5	3.3.2.2	2.4	3.3.5.5		B2	B3.3	B1	
Microbiology & bacteria				B1.1.2	3.5.2.3		3.3.2, 3.3.5	B2.2		B3.1		Unit 6
Organic farming - benefits & costs?			👍				3.3.5.4					Unit 12
Something fishy! - adaptation to environ.	👍				3.3.2.1			B3.3	B1, B2			Unit 3
Lifecycles & growth - meet the family!	👍	👍								B3.3		
Gone fishing! - fish farming for food				B1.4, 1.5	3.3.2.1	2.4		B3.1, 3.3	B1, B2	A3	B1	Unit 3
Pollution! - water quality	👍			B1.4	3.3.2.1	2.4		B3.1		A3	B1	Units 3 & 11
Magic manure and lovely landfill				B1.6	3.3.2.2, 3.3.2.3			B3.1	B2	B3.3	B1 3.26-27	
Sustainability - human impact	👍	👍	👍		3.5.3.2		3.3.5	C1.1, P3.3	C1, P1, B2, P2			Units 2,3,11
The secret life of soils							3.3.5	B4				Unit 1
Selective breeding				B1.7	3.5.2.3		3.3.5			B3.3		Unit 20
Crops, cultivation and condition for growth				B1.7	3.3.2.2, 3.2.2.3		3.3.5		C2	B3.2		Unit 12
The tropics - biodiversity			👍	B1.4, B1.7		2.4		B3.3			B1	Units 1,3,11,12
Geographical and scientific fieldwork techniques	👍	👍	👍	👍	👍	👍	👍	C1, B2	👍	👍	👍	👍