

Leaving Certificate

Agricultural Science

Animal Science and Production

Please see *Teachers' Notes* for explanations, additional activities, and tips and suggestions.

Levels	Students' English language skills should be developed to Level B1 during funded Language Support. Mainstream subject learning will require the development of skills at Level B2 if students are to cope with public examinations.	
Language focus	Key vocabulary, word identification, sentence structure, extracting information from text, writing text, grammar.	
Learning focus	Using Agricultural Science textbooks and accessing curriculum content and learning activities.	
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Using this unit

Language support and mainstream subject class

The sections *Activating students' knowledge*, *Focus on vocabulary*, and *Focus on grammar* have been designed, in particular, for Language Support classes.

Focus on reading and *Focus on writing* are suitable for use in either Language Support or subject classes.

Answer Key

Answers are provided at the end of the unit for all activities except those based on free writing.

Textbooks

This unit focuses on sections on Animal Science and Production from the Agricultural Science Leaving Certificate curriculum. Students will need to use their textbooks if they are to gain the most benefit from the activities.

Learning Record

The Learning Record is intended to help students monitor their progress. This can be downloaded or printed from the website in the section *Advising Students and Record of Learning for the Leaving Certificate*. A copy of the Learning Record should be distributed to each student for each unit studied.

Students should:

1. Write the subject and topic on the record.
2. Tick off/date the different statements as they complete activities.
3. Keep the record in their files along with the work produced for this unit.
4. Use this material to support mainstream subject learning.

Symbols

Symbols are used throughout the unit to encourage students to develop their own learning and support materials.



prompts students to file the sheet when they have completed the activity. This is used for activities which can be used as a reference in the future e.g. for subject classroom, revision, homework etc.



prompts students to add vocabulary, definitions, or examples of vocabulary in use to their own personal glossary for the topic. A personal glossary makes study and revision more efficient.

Keywords

The list of keywords for this unit is as follows:

abdominal	colostrums	embryos
acids	commonly	enzymes
adrenal	concentrate	ewe
agricultural	concentration	examine
amino	conception	external
ammonium	condition	faeces
anaemia	conformation	failure
animal	connective	farm
anterior	consumption	farrowing
antibiotics	contagious	fat
antibodies	content	fattened
aphids	continental	fatteners
arteries	corpus	fattening
artificially	cortex	feed
available	cow	feedstuff
bacon	crop	females
bacterial	crossbred	fertilization
barley	culled	fertilizers
be	cultivation	fever
beef	cycle	fig
beet	daily	flies
bile	dairy	flock
birds	days	fluid
birth	dehydration	fluke
blackface	dental	follicle
blood	desirable	foot
boars	detection	found
body	diarrhoea	fowl
bone	diet	fish
bowman's	digest	gametes
brain	diploid	gaseous
breed	dipping	gene
broiler	disease	generation
bull	dissecting	genetic
bulls	dissection	genotype
calf	distilled	genus
calves	division	gestation
calving	domestic	gilts
capillaries	dominant	gizzard
carcase	dosed	gland
cattle	drosophila	glucose
cause	ducts	glycogen
cavity	dung	grain
cell	during	grass
cellulose	dwarf	grassland
cereal	early	graze
characteristic	earthworm	growth
chromosome	effectors	gut
coding	eggs	haemoglobin

NAME: _____ **DATE:** _____
LC AGRICULTURAL SCIENCE: Animal Science and Production

handling	lymph	pituitary
haploid	mainly	polled
hatch	maintain	poultry
hay	maintenance	practices
heifer	male	pregnancy
herd	mammal	prevent
herds	management	prevention
heterozygous	mastitis	principles
hind	mate	procedure
hindquarters	material	produce
homologous	mating	production
homozygous	meal	progeny
hooved	meiosis	progesterone
hormone	metabolically	properly
host	microscopic	protein
housed	milk	protozoa
however	milking	purebred
humans	mitosis	quality
hybrid	molasses	rabbit
hygiene	monohybrid	ram
immunity	months	ration
importance	mucus	rations
improver	muscle	reared
impulse	muscles	rearing
inbreeding	navel	receptors
include	needed	rennin
individual	nematodes	replacement
infected	nervous	reproduction
infection	normal	reproductive
infectious	notifiable	requirements
inheritance	nutrient	results
injection	nutrition	rumen
insecticide	nutritional	ruminants
insemination	observe	salts
intake	occur	scab
intestinal	occurrence	science
intestine	oestrous	scour
involves	offspring	season
kidney	oilseed	secreted
lactation	organic	secretion
lamb	organisms	see
lambing	organs	seed
lameness	parasite	seepage
larva	parasitic	sex
legume	parlour	sheep
levels	pasture	should
lice	pastures	silage
lipids	peak	similar
listlessness	period	skeleton
liver	phenotype	skin
loin	phyla	slaughter
lowland	phylum	slurry
lungs	pig	snail
lungworms	pigs	sow

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specialized
species
sperm
spores
steers
stimulate
stocking
stomach
storage
strains
straw
sucking
suckle
sugars
summarized
supervision
symptoms
system
table

tapeworms
teat
thorax
thrive
thus
thyroid
ticks
tissue
trace
traits
transmitted
transverse
treated
treatment
udder
unhygienic
unit
untreated
uric

urine
utilization
varieties
ventilation
vessels
veterinary
via
virus
weaned
weight
winter
wool
worms
wrinkled
yield
yielding
yields

NAME: _____ DATE: _____
LC AGRICULTURAL SCIENCE: Animal Science and Production

Vocabulary file (1) for the topic
Animal Science and Production

Word	Meaning	Page(s) in my textbook	Note
organisms			
invertebrates			
vertebrates			
digestive systems			
the nervous system			
animal feedstuffs			
dairying			
species			



NAME: _____ DATE: _____
LC AGRICULTURAL SCIENCE: Animal Science and Production

Vocabulary file (2) for the topic
Animal Science and Production

Word	Meaning	Page(s) in my textbook	Note
spore			
parasites			
mammals			
organs			
the abdomen			
the intestine			
blood circulation			
blood-clotting			
kidney			



Introduction

Activating students' existing knowledge

Use a spidergram to activate students' ideas and knowledge on the key points in this chapter. See **Teachers' Notes** for suggestions.

Possible key terms for the spidergram:

Digestive Systems

Animal health

Mammals

- Invite students to provide key words in their own languages.
- Encourage dictionary use.
- Encourage students to organise their vocabulary into relevant categories (e.g. meaning, nouns, keywords, verbs etc.).



Students should record vocabulary and terms from the spidergram in their personal dictionaries.

Level: B1
Individual / pair

Focus on vocabulary

1. Matching

Match each expression in Column A with a definition in Column B. Draw a line between the matching expressions.

Column A	Column B
invertebrates	animals with a backbone
parasites	a part of an animal or plant that has a special purpose
mammal	when the body changes food in the stomach into substances that it can use
organs	animals without a backbone
vertebrates	plants or animals that live on or inside another plant or animal in order to get food
digestion	an animal that feeds its babies on milk from its body

2. Now check your understanding of the key words by putting them into the blanks in the sentences below.

- Birds and mammals are examples of _____ animals.
- Two groups of _____ are flukes and tapeworms.
- A worm is an example of an _____ animal.
- _____ have hair and most of them produce live young.
- The heart, lungs and liver are all _____.
- During _____ food stuffs are broken down sufficiently to allow them to be absorbed.

3. Missing Words

Study the words in the box, and then check that you understand them by putting them into the sentences below.

oesophagus	arteries	dairying	
vaccine	lungs	saliva	notifiable diseases
breeds	feedstuffs	veins	

- The smell and sight of food, and also the presence of food in the mouth, causes the secretion of _____.
- In mammals the _____ is a simple tube connecting the mouth and the stomach.
- Blood vessels which deliver blood to the heart are called _____.
- Blood vessels which carry blood away from the heart are called _____.
- A _____ is given to people and animals to stop them from getting a particular disease.
- Mammals have two large _____ in the chest cavity or thorax.
- Examples of animal _____ are hay, silage, barley and wheat.
- _____ are highly contagious and are a serious national animal health risk.
- _____ and beef production together account for 73% of all agricultural production in Ireland.
- Cattle _____ are of three types: dairy, beef and dual purpose.

Level: B1
Individual / pair

Focus on grammar

Adverbs

(Adverb: a word that describes or gives more information about a verb.)

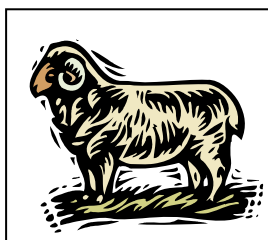
Example: he ate quickly)

4. Read the sentences and underline the adverbs, there is one in each sentence.



- An experienced person should regularly examine the cow approaching the date.
- If the birth is delayed it is advisable to obtain veterinary assistance immediately.
- Calves can be reared naturally by suckling the cow.
- Once grass is growing normally, concentrate feeding is reduced.
- In dairy farming all calf-rearing is done artificially.

5. Insert the following adverbs into the sentences below.



widely selectively gradually
accurately traditionally

- _____, sheep have been associated mostly with hill and mountain areas.
- Sheep have been _____ bred throughout history for wool quantity and quality.
- The amount of concentrates fed should be increased _____ up to a maximum at lambing of 0.5 kg per ewe per day.
- Lambing outdoors, although _____ practised, is not recommended.
- The records kept during the mating season enable the farmer to _____ estimate the lambing date of each ewe.

Level: B1 / B2
Individual / pair

Focus on reading

6. Practise reading quickly! Read the questions a) to h), and then match them to the answers in the boxes, 1-8. Sometimes you won't know the answer because you haven't studied it yet, but you can guess – use clues such as the number of pieces of information, and your own general knowledge.

- a) What is the function of the endosperm?
- b) What is meant by the germination of a seed?
- c) What is the name given to the type of change in the life cycle of an insect?
- d) What is the importance of tagging animals on the farm?
- e) What are the main benefits of sowing certified seed?
- f) Give three functions of the liver.
- g) In what part of the digestive system does absorption of food into the blood stream take place?
- h) State two differences between the digestive system of a pig and a sheep.

1. growth of plant/ growth of seed/ sprouting

2. traceability for the farmer or for mart or for butcher or for consumer/ legal requirement

3. free of weed seeds/ high purity/ high germination rate/ free of wild oat seed/

4. food store

5. small intestine or ileum

6. breaks down red blood cells/ regulates temperature/ breaks down toxins

7. pig does not have ruminant system/ food is stored in rumen/ single(simple) stomach

8. metamorphosis

Level: B1 / B2
Individual / pair

Focus on writing

7. Practise writing sentences by putting the words and phrases into the correct order. (*We have done the first one for you.*)

a) one and two million / most estimates/ the number of animal species/ put /in the world/ at between/

Most estimates put the number of animal species in the world at between one and two million.

b) that are warm-blooded /the birds and the mammals/ two groups of animals/ are the only /in the Animal Kingdom/

c) birds/ winged vertebrates /are

d) include /chemicals/ carbohydrates, fats, proteins, vitamins, minerals and water/ found in foods

e) to allow them/ during digestion/ to be absorbed/ foodstuffs are broken down/ sufficiently

f) sheep/are called ruminants/ and their close relatives/cattle/

g) heart /mammals/ a four-chambered/have

h) a mammal/ air enters/ though the mouth or nose/ either/

i) the kidneys/ for the production of urine/ are specialised organs

Answer key

1.

invertebrates	animals without a backbone.
parasites	plants or animals that live on or inside another plant or animal in order to get food.
mammal	an animal that feeds its babies on milk from its body.
organs	a part of an animal or plant that has a special purpose
vertebrates	animals with a backbone.
digestion	when the body changes food in the stomach into substances that it can use.

2.

Birds and mammals are examples of **vertebrate** animals.

Two groups of **parasites** are flukes and tapeworms.

A worm is an example of an **invertebrate** animal.

Mammals have hair and most of them produce live young.

The heart, lungs and liver are all **organs**.

During **digestion** food stuffs are broken down sufficiently to allow them to be absorbed.

3.

- The smell and sight of food, and also the presence of food in the mouth, cause s the secretion of **saliva**.
- In mammals the **oesophagus** is a simple tube connecting the mouth and the stomach.
- Blood vessels which deliver blood to the threat are called **veins**.
- Blood vessels which carry blood away from the heart are called **arteries**.
- A **vaccine** is given to people and animals to stop them from getting a particular disease.
- **Mammals** have two large lungs in the chest cavity or thorax.
- Examples of animal **feedstuffs** are hay, silage, barley and wheat.
- **Notifiable diseases** are highly contagious and are a serious national animal health risk.
- **Dairying** and beef production together account for 73% of all agricultural production in Ireland.
- Cattle **breeds** are of three types: diary, beef and dual purpose.

4.

- An experienced person should regularly examine the cow approaching the date.
- If the birth is delayed it is advisable to obtain veterinary assistance immediately.

- Calves can be reared naturally by suckling the cow.
- Once grass is growing normally, concentrate feeding is reduced.
- In dairy farming all calf-rearing is done artificially.

5.

- Traditionally, sheep have been associated mostly with hill and mountain areas.
- Sheep have been selectively bred throughout history for wool quantity and quality.
- The amount of concentrates fed should be increased gradually up to a maximum at lambing of 0.5 kg per ewe per day.
- Lambing outdoors, although widely practised, is not recommended.
- The records kept during the mating season enable the farmer to accurately estimate the lambing date of each ewe.

6.

- a) 4
- b) 1
- c) 8
- d) 2
- e) 3
- f) 6
- g) 5
- h) 7

7.

Most estimates put the number of animal species in the world at between one and two million.

The birds and the mammals are the only top group of animals in the Animal Kingdom that are warm-blooded.

Birds are winged vertebrates.

Chemicals found in foods include carbohydrates, fats, proteins, vitamins, minerals and water.

During digestion foodstuffs are broken down sufficiently to allow them to be absorbed.

Cattle, sheep and their close relatives are called ruminants.

Mammals have a four-chambered heart.

Air enters a mammal either through the mouth or nose.

The kidneys are specialised organs for the production of urine.