

Colorado Agriscience Curriculum

Life Science: Animals	Total Instruction Time (In Hours)*	
	<i>Two Semesters</i>	<i>One Semester</i>
Unit 1 – Introduction to Animal Science	9-11	7-9
Unit 2 – Cell Structure and Function	14-16	10-12
Unit 3 – Anatomy and Physiology	14-16	10-12
Unit 4 – Reproduction and Genetics	22-24	12-14
Unit 5 – Feeds, Nutrition and Digestion	17-19	10-12
Unit 6 – Animal Health and Disease	15-17	8-12
Unit 7 – Animal Behavior and Environment	8-10	4-6
Total Hours of Instruction	99-113 Hours	61-75 Hours
<i>* Includes 2 days for Unit Review and Test</i>		
Unit 1 – Introduction to Animal Science	<u>9-11 Hours</u>	<u>7 Hours</u>
Lesson 1 – The World Hunger Challenge	1	1
Lesson 2 – History of the Animal Science Industry	1	
Lesson 3 – The Animal Science Industry: Trends and Challenges	1	1
Lesson 4 – Animal Kingdom Taxonomy	1	1
Lesson 5 – Livestock Breed Classification and Terminology	1	
Lesson 6 – A Look at Livestock: Scientific Investigation 1	1	1
Lesson 7 – A Look at Livestock: Scientific Investigation 2	1	1
Review and Test	2	2
Unit 2 – Cell Structure and Function	<u>14-16 Hours</u>	<u>10 Hours</u>
Lesson 1 – Introduction to the Animal Cell and Microscope Lab	1	
Lesson 2 – Biology of the Animal Cell 1	1	1
Lesson 3 – Biology of the Animal Cell 2	2	1
Lesson 4 – Cellular Organelle Exploration Activity	2	
Lesson 5 – DNA and DNA Replication	2	2
Lesson 6 – Protein Synthesis	2	2
Lesson 7 – The Cell Cycle-Mitosis	1	1
Lesson 8 – Cellular Reproduction-Meiosis	1	1
Review and Test	2	2

<u>Unit 3 – Anatomy and Physiology</u>	<u>14-16 Hours</u>	<u>10 Hours</u>
Lesson 1 – Animal Growth Processes	1	
Lesson 2 – Understanding Animal Life Span	1	
Lesson 3 – The Skeletal System	1	1
Lesson 4 – The Muscular System	1	1
Lesson 5 – The Digestive System	1	1
Lesson 6 – The Respiratory System	1	1
Lesson 7 – The Circulatory System	3	1
Lesson 8 – The Nervous System Form	1	1
Lesson 9 – The Endocrine System	1	1
Lesson 10 – The Reproductive System	1	1
Review and Test	2	2
<u>Unit 4 – Reproduction and Genetics</u>	<u>22-24 Hours</u>	<u>12 Hours</u>
Lesson 1 – Female Reproductive Anatomy	1	1
Lesson 2 – Male Reproductive Anatomy	1	1
Lesson 3 – Male Hormones of Reproduction	1	1
Lesson 4 – Female Hormones of Reproduction and Estrous	1	1
Lesson 5 – Estrus Synchronization	1	
Lesson 6 – Heat Detection	1	
Lesson 7 – Fertilization Lab 1	1	
Lesson 8 – Fertilization Lab 2	1	
Lesson 9 – Fertilization, Pregnancy and Parturition	1	1
Lesson 10 – Chromosomes and Genetics	1	1
Lesson 11 – Mendel and Genetics	1	1
Lesson 12 – Dominant and Recessive Genes	1	1
Lesson 13 – Genetic Variation and Gamete Formation	1	1
Lesson 14 – Things that Affect Heredity	1	1
Lesson 15 – Mating Systems	1	
Lesson 16 – Artificial Insemination 1	1	
Lesson 17 – Artificial Insemination 2	1	
Lesson 18 – Artificial Insemination 3	1	
Lesson 19 – Embryo Transfer	1	
Lesson 20 – Using EPDs in Selection	1	
Review and Test	2	2

<u>Unit 5 – Feeds, Nutrition and Digestion</u>	<u>17-19 Hours</u>	<u>10 Hours</u>
Lesson 1 – Introduction to Feeds and Nutrition	1.5	
Lesson 2 –Ration Components and Calculating Calories	1.5	1
Lesson 3 – Understanding Nutrients 1 - Proteins, Lipids and Carbohydrates	1	1
Lesson 4 – Understanding Nutrients 2 - Vitamins	1	1
Lesson 5 – Understanding Nutrients 3 - Minerals	1	1
Lesson 6 – Ruminant Digestion	1	1
Lesson 7 –Monogastric Digestion	1	1
Lesson 8 –Digestive System of the Horse	1	
Lesson 9 – Understanding Colic in Horses	1	
Lesson 10 – Digestion and Absorption Lab	2	1
Lesson 11 – Specialty Feeds	1	
Lesson 12 – Nutrient and Feed Requirements	1	1
Lesson 13 – Balancing a Feed Ration	1	
Review and Test	2	2
<u>Unit 6 – Animal Health and Disease</u>	<u>15-17 Hours</u>	<u>8 Hours</u>
Lesson 1 – The Cost of Animal Health	1	
Lesson 2 – Detecting Unhealthy Animals	1	1
Lesson 3 – Classification of Diseases	1	1
Lesson 4 – Internal and External Parasites	2	2
Lesson 5 – Poisonous Plants of Colorado	1	
Lesson 6 – Vaccines and Vaccinations	1	1
Lesson 7 – Administering Medications	1	1
Lesson 8 – Parturition and Related Problems and Illnesses	1	
Lesson 9 – Care of the Newborn	1	
Lesson 10 – Zoonotic Diseases	1	
Lesson 11 – Current Issues in Animal Health: Mad Cow Disease	1	
Lesson 12 – Current Issues in Animal Health: Chronic Wasting Disease	1	
Review and Test	2	2
<u>Unit 7 – Animal Behavior and Environment</u>	<u>8-10 Hours</u>	<u>4 Hours</u>
Lesson 1 – The Nervous System’s Role in Animal Behavior	1	
Lesson 2 – Ten Types of Animal Behavior	1	1
Lesson 3- Handling and Restraint of Animals	1	
Lesson 4 – Evolution of Livestock Breeds	1	1
Lesson 5 – Animal Adaptations	1	
Lesson 6 – Animal Populations and Environment	1	
Review and Test	2	2