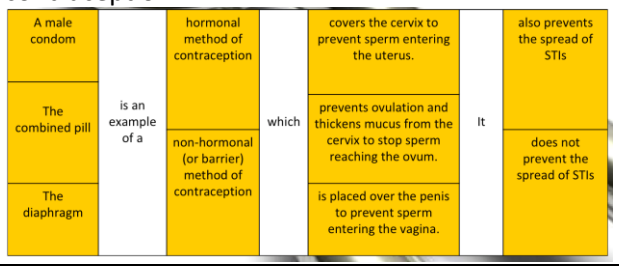
Brixham College: Year 11 BIOLOGY

Lesson	Summary of content – page numbers refer to CGP biology book	Time
1	Nervous system – the basics Make notes and answer Q Biology CGP 172 - 173	September
2	Pathways and synapses Make notes and copy synapse diagrams CGP pages 174 - 175 Answer Q	
3 **reflex worksheets**	Reflex actions Make notes and copy reflex diagrams CGP pages 175 – 176. Complete the 2 reflex activities Answer Q	
4	**Required practical 6: investigate the effect of a factor on human reaction time** **Read pages 177 CGP Biology.** **Write a method for testing reflexes**	
5	Describe the endocrine system and define the term hormone. Label a diagram of the organs in the endocrine system. Compare the actions of the nervous and endocrine systems. Read pages 182 – 183 Copy Figure 2-Make notes and answer Q	
6	Control of blood glucose **Read pages 184 – 185** **Copy Fig 1 and 2 AND MAKES NOTES** detailing how insulin and glucagon control blood sugar levels.	October
7	Type 1 and type 2 diabetes – compare symptoms, treatments and causes. Interpreting graphs. Read pages 185 – 86. Make notes on type 1 and type 2 diabetes. Answer Q page 188.	
8	Hormones in human reproduction Read pages 189 – 190. Make notes on names of hormones and the menstrual cycle. Answer fact recall Q page 188.	
9	Contraception Read pages 193– 194. Make notes / revision poster on the different forms of contraception. 	
10	Hormones and fertility treatments and Negative feedback – HT ONLY Read pages 195– 197. Make notes on IVF and the pros and cons of IVF. Answer Q page 197. FT – revise cells, diffusion, osmosis, active transport	

11	Thyroxine, adrenalin and negative feedback -HT only- Read pages 198– 199. Make notes on thyroxine and adrenaline. Answer Q page 199. FT – revision techniques. BUG it. Exam Q practice Create a revision poster on nerves and hormones. Answer exam q page 202.	
12	Recap chromosomes, genes and DNA, mitosis and meiosis - **KEY CONCEPT!** **Read pages 204 – 205, 36 and 208. Create a poster / notes outlining mitosis and meiosis. Answer Q page 209**	November
13	Sexual and asexual repro. Read pages 206 – 207. Make notes and answer Q Inheritance of sex- Read pages 213 – 216. Copy genetic / punnet square diagrams	
14	Genetic diagrams –etc Start with genetic diagrams of fur colour, flower colour, smooth and wrinkled seeds. Reda page 217 Create a key word glossary -definitions of dominant, recessive, phenotype, genotype, alleles, homozygous, heterozygous Copy example 1, 2 and 3	
15	Genetic diagrams Part 2: Cystic fibrosis, polydactyly. Read page 223 – 224. Make notes on these diseases Answer Q on page 222	
16	Embryo screening Read pages 225 – 226. Make notes and answer Q	
17	Variation, Evolution, fossils and extinction Use pages 230 – 237 to create a summary poster / revision cards on these areas. Answer Q	
18	Antibiotic resistant bacteria Read pages 246 – 247 and make notes about what antibiotic resistance is and how to control the spread of antibiotic resistance. ARTY? Create an eye catching poster for a doctors waiting room advising people not to take antibiotics.	December
19	Revision and Recap of learning so far – All of units 4.1 – 4.4. Unit 4.1 = Cells Pages 23 – 64 Unit 4.2 = Lungs, heart, digestion and enzymes- Pages 66- 80 and 95 – 122	
20 - 21	Revision and Recap of learning so far – All of units 4.1 – 4.4. Unit 4.3 =Infectious disease – Pages 124 – 142 This was last covered in Year 9 so spend time revising this!	
22 -23	Revision and Recap of learning so far – All of units 4.1 – 4.4. Unit 4.4= respiration and plants- Pages 144 – 165 and 83 – 87	
24	Complete a whole prac paper 1 biology	

25 WORKSHEET 1	Selective breeding Read pages 238 – 239. Make notes on the process of selective breeding and potential problems.	January
26	Genetic engineering Examples of genetic engineering. Advantages and disadvantages. HT only - describe the process in detail and evaluate. Read pages 240 - 241. Make notes on the pros and cons. HT only – describe the process of genetic engineering.	
27	Classification – The 3 domain system, binomial system and evolutionary tree diagrams – revision from year 10 Read pages 248 – 250. Make notes and answer Q	
28 – 29	Communities, biotic abiotic factors and competition Read pages 255- 260 Make notes and answer Q on page 257	
30	Adaptations and extremophiles Read page 261 - 262 Make notes and answer Q on page 257	
31	Food chains and predator prey graphs Read pages 263 – 264 Make notes and answer Q	
32 + 33	**Required practical 7: measure the population size of a common species in a habitat. Use sampling techniques to investigate the effect of a factor on the distribution of this species.** CGP biology 9 – 1 Read page 265- 268 Write a method describing how to estimate number of daisies in a field Write down how to calculate the mean, median and mode What is a transect? Copy fig 4 and make notes	February
34	Carbon cycle and water cycle – Read pages 269 – 270 Copy out Fig 1 and Fig 2 and make notes on these cycles	
35	Biodiversity Read pages 269 – 270 and 284 - 285 Make notes and answer Q	
36	Global warming and acid rain Read pages 278 – 280 Make notes and answer Q	
37	Deforestation and peat bogs Explain why the destruction of peat bogs is harmful to the environment Read pages 281 – 282 Make notes and answer Q	
38	Paper 2 content finished. Revision and recap of learning so far. Create revision cards, use fold in half sheets and mind maps Unit 5- Hormones, homeostasis and nerves	March
39	Paper 2 content finished. Revision and recap of learning so far. Create revision cards, use fold in half sheets and mind maps	

	Unit 6 – Inheritance, Genetic diagrams, evolution, fossils, extinction and classification	
40	Paper 2 content finished. Revision and recap of learning so far. Create revision cards, use fold in half sheets and mind maps Unit 7- Competition, abiotic and biotic factors, adaptations, food chain and webs, water and carbon cycle, global warming and deforestation	March
41 and 42	Complete an old Paper 2 for revision and mark it	
43	Revision 4.1 – cells – animal/ plant/ eukaryotic / prokaryotic. Function of organelles REQD PRAC REVISION - MICROSCOPY	April and May
44	Revision 4.1 – cells – Transport: Diffusion, active transport and osmosis and exam questions REQD PRAC REVISION - OSMOSIS	
45	Revision 4.2 – Organisation –Digestive system, enzymes REQD PRAC REVISION – FOOD TESTS	
46	Revision 4.2 – Organisation – Heart, blood and circulatory system– CV disease and treating heart disease- stents, replacement valves.	
47	Revision 4.3 – Infection and disease – viral, bacterial, fungal and protist diseases and human defence systems	
48	Revision 4.3 – Infection and disease – vaccinations antibiotics and drug development	
49	Revision 4.4 –Photosynthesis and limiting factors – REQD PRACTICAL REVISION – RATES OF PHOTOSYNTHESIS	
50	Revision 4.4 –Structure of a leaf, xylem phloem and transpiration	
51	Revision 4.4 –Respiration and response to exercise and metabolism	

The order of a REFLEX reaction

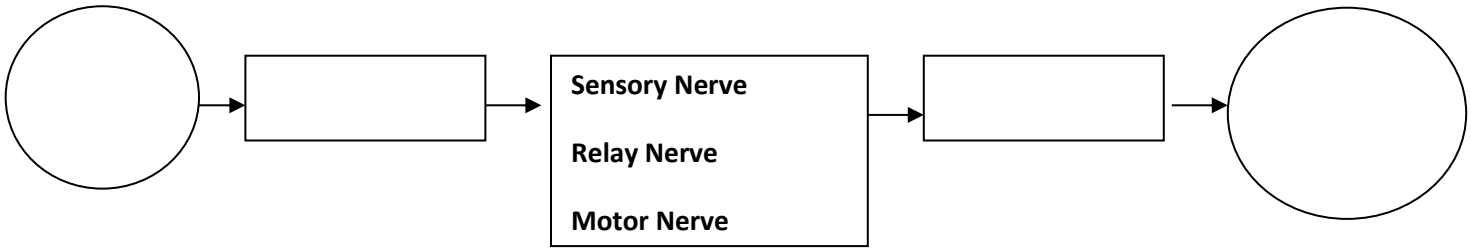
A	A sensory neurone synapses with a relay neurone
B	The electrical impulse is carried along the motor neurone
C	A person unknowingly places their hand into the flame of a candle
D	The biceps pulls on the bones of the lower arm, moving the hand out of the flame
E	Temperature receptors in the skin of the hand detect the stimulus
F	The electrical impulse causes the biceps muscle (the effector) to contract
G	The electrical impulse is carried along the relay neurone to a synapse with the cell body of the motor neurone
H	An electrical impulse is carried along a sensory neurone to the CNS

C							

Reflex Arc stories

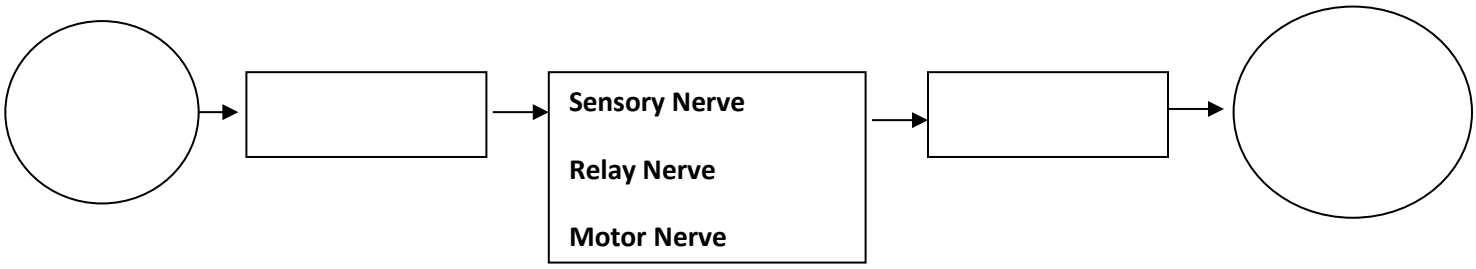
Instructions: You and a partner must use the story to complete the simple reflex arc diagram. To complete the diagram, identify the stimulus, receptor and effector in each story.

1. John was on his way home from school when he hears to pitbulls barking. Before he has a chance to look at them, he starts to run away.



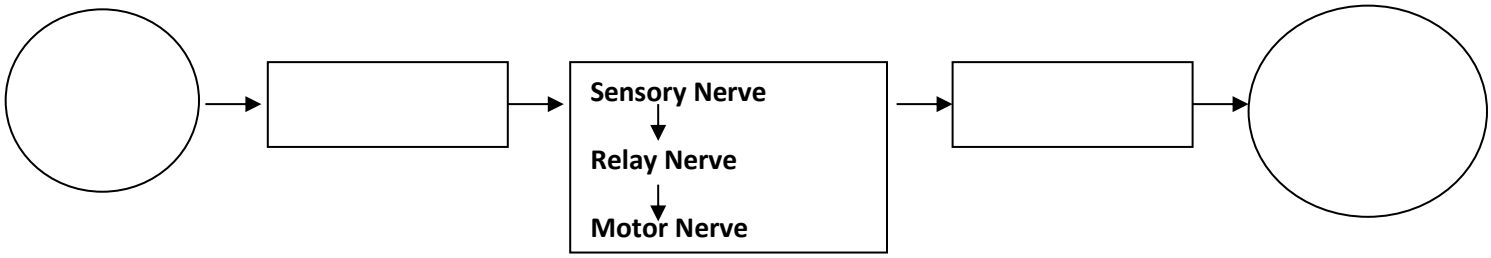
Stimulus Receptor Effector Response

2. Kate goes on a hike. She is bitten by a mosquito but quickly kills it.



Stimulus Receptor Effector Response

3. You are cooking but you accidentally pick up the pot while it is hot.



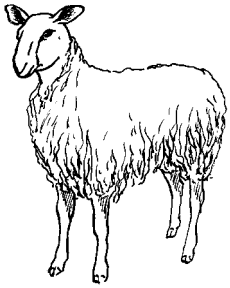
Stimulus Receptor Effector Response

Instructions: On the back of the page, create <u>two</u> reflex stories and draw a reflex arc for each one. Be sure to identify the stimulus, receptor, effector and response.

TASK 1: Selective Breeding

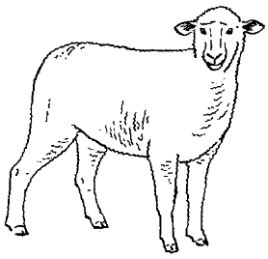
A

The Balwen mountain sheep is able to live in cold, harsh conditions.



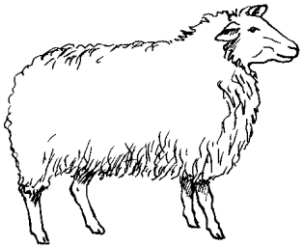
B

The Bluefaced Leicester sheep produces good quality wool.



C

The Polled Dorset sheep produces good quality meat.



D

The Friesian Milk sheep produces a lot of milk.

1. Each of these sheep has been produced by **selective breeding**. For each sheep write down one characteristic that has been selected

Farmers often want to breed two different breeds of sheep together. This is called **cross-breeding**. The offspring produced by this method should have characteristics from both parent sheep

2. Which of the sheep above might a farmer use to breed sheep with good meat and good wool?

3. Which of the sheep might a farmer use to produce sheep with good wool that can survive in the Welsh mountains?

A sheep farmer has a flock of Wensleydale sheep. To win a prize at the local farming show, he wants to have sheep with very long wool. Some time ago, he took the ewes (female sheep) and rams with the longest wool and allowed them to breed. He allowed the new lambs to grow and then kept the ones with the longest wool and allowed them to breed. The others were sold at market. It took him eight years to produce sheep with wool long enough for him to win a prize.

4. What is a male sheep called?
5. Why is this farmer's method an example of selective breeding?
6. Suggest why it took him so long to win a prize.
7. Think about the weather conditions where you live. Write down a list of characteristics that a sheep should have if it were to be farmed in your area.
8. What other characteristics would you like your sheep to have and why?