

Work for Year 10 – Biology

Task 1 - Log on to <https://www.senecalearning.com/> Sign up to an account if you do not already have one.

Join the class using code: **nnluk58tcs**

Task 2 – Make notes using your knowledge organiser for this topic and complete the self- quizzing questions

Task 3 – Complete the questions below. You may use the revision guides you have been provided with to help you with these.

A. Reproduction, meiosis, DNA and the genome

1. What is a gamete?
2. Name the male and female gametes in a) a human b) a daisy plant
3. Compare mitosis and meiosis in the following table

	Meiosis	Mitosis
Genetic mixing happens		
Gamete production occurs		
New cells show variation		
New cells have same number of chromosomes as parent		
Happens in skin cells		
Two divisions occur		
Two new cells are formed as a result		
Identical cells are formed		

4. How many chromosomes are found in the nucleus of a human:
 - a) ovary cell?
 - b) egg cell?
 - c) embryo cell?
 - d) a cell just after fertilisation has occurred?
 - e) a testes cell?
5. Name the shape which best describes the DNA polymer.
6. How is DNA organised inside the cell nucleus?

7. Which is larger, a chromosome or a gene?
8. What does a gene code for?
9. Write down the definition of the genome of a horse.
10. List **two** reasons why it is important to understand more about the human genome.

Biology only

11. What are three advantages of sexual reproduction?
12. What are three advantages of asexual reproduction?
13. List three organisms which reproduce using both sexual and asexual reproduction methods.
14. Where would you find a nucleotide?
15. What does a nucleotide consist of?
16. What are the symbols of the 4 bases found in DNA?
17. What does the code for an amino acid consist of?
18. Fill in the missing terms:

The long strands of DNA are made of alternating _____ and _____ sections.

Attached to each _____ is one of the four bases.

The DNA polymer is made up of repeating _____ units.

Higher Tier biology only

19. In the complementary strands of DNA – which base is T always linked to?
20. Which organelle in the cytoplasm carries out protein synthesis?
21. What do carrier molecules bring to the organelle from the cytoplasm?
21. What happens in protein synthesis once the protein chain is complete?
22. What happens if a mutation codes for a slightly altered enzyme protein with a different shape?
23. What can non-coding parts of DNA do?