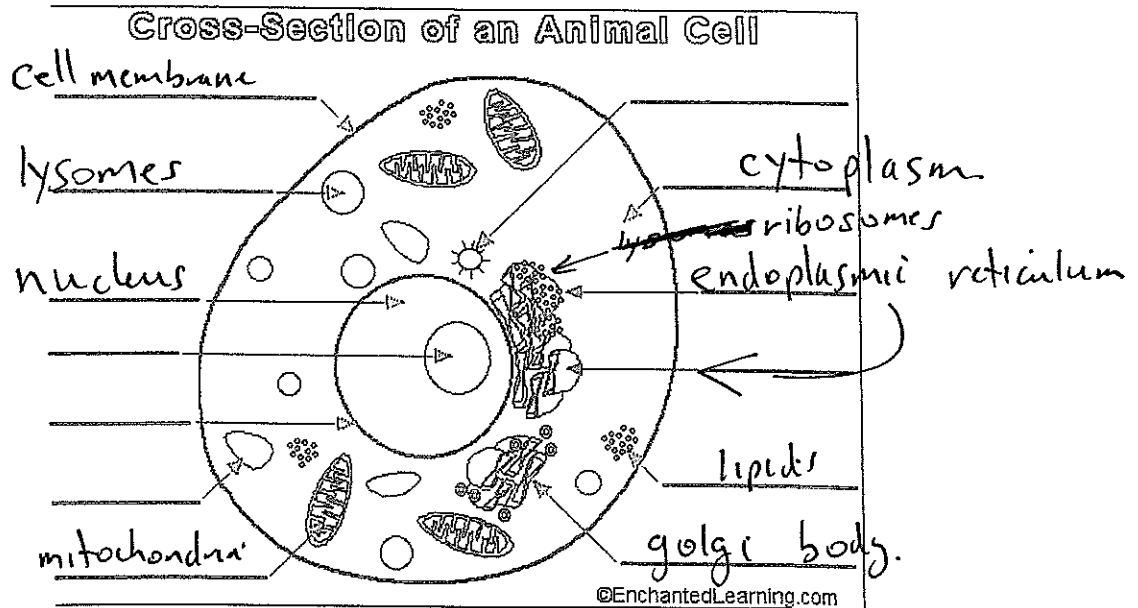
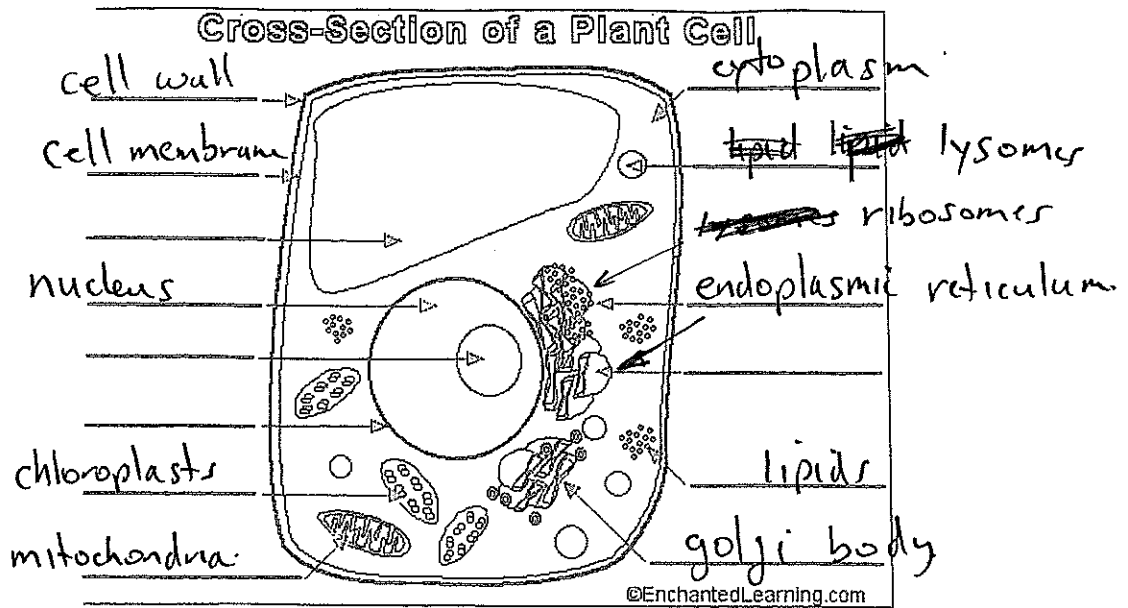


YEAR 10 REVISION -

BIOLOGY COURSE

1. Label and indicate functions of organelles



2. Name 3 differences between sexual and asexual reproduction.

- Sexual - 2 parents
asexual - 1 parent
- asexual - off-spring exact copies of single parent
sexual - off-spring have a combination of traits from both parents
- asexual - many off-spring
sexual - fewer off-spring

3. Give 4 different types of asexual reproduction and explain how each produces new offspring.

- fission - single cell splits into two identical daughter cells
- mitosis
- budding - A new identical individual buds off parent and then breaks off
- spores - reproductive cells are released by parent - identical off-spring
- regeneration - New individuals grow from small pieces of parent that have broken off

4. Fill in the following table. Give 2 different types of sexual reproduction and explain how each produces new offspring. What are the advantages and disadvantages of each method?

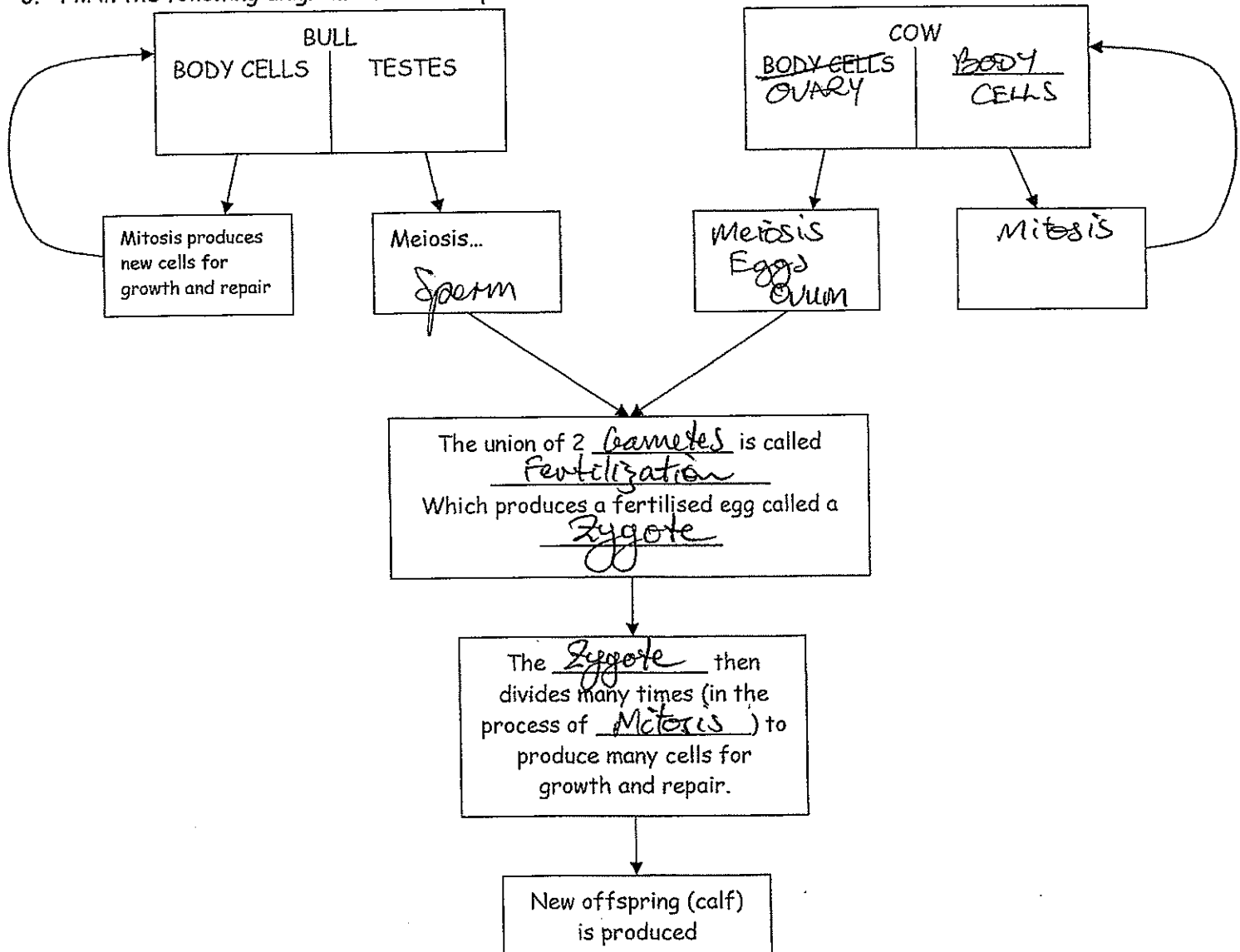
SEXUAL REPRODUCTIVE METHOD	ADVANTAGES	DISADVANTAGES
1. external fertilisation The new offspring are produced by... <u>eggs being fertilised outside the body</u>	<u>can have many more off-spring</u>	<u>The eggs could be washed away or eaten by another animal so the potential losses could be great.</u>
2. internal fertilisation The new offspring are produced by... <u>eggs fertilised inside the body of the mother</u>	<u>The gametes remain in a watery environment during transfer and therefore they don't dry out.</u>	<u>Have few off-spring so need to ensure off-spring survival - need to protect and nurture off-spring</u>

haven't done this yet. Not in test

test

Not

6. Fill in the following diagram on sexual reproduction with the correct words.



7. A chromosome is a structure that holds our genetic information.

Q- Name the chemical that makes up a chromosome.

A- DNA

Q- Name the chemical that pairs off with cytosine.

A- guanine

Q- Name the two substances that make up the backbone of a chromosome.

A- phosphate and sugar.

Q- How many chromosomes are found in a human bone cell?

A- 23 pairs (46)

Q- Sperm and ova are known as:

A- gamete

Q- Define a zygote.

A- fertilised egg

Q- How many sets of chromosomes does a haploid cell have?

A- 23 (half)

Q- Name the type of cell division that gives rise to variation.

A- Meiosis

Q- Complete the following table. (Change font colour to black for the answers).

	Meiosis	Mitosis
Type of daughter cell	haploid	diploid
Number of cell divisions	2	1
Place of occurrence	gonads	all body cells
State of daughter cells	4	2
Number of daughter cells	4	2

8.

Define these terms.

a Autosome - not in test

b Karyotype - number of chromosomes in a normal cell and type of chromosome.

How many chromosomes do humans have in:

a skin cells? 46

b liver cells? 46

c sperm?

d ovum? 23

e nerve cells? 46

Describe how the sex of a human baby is determined. X

10.

A karyotype of a human baby is shown at the right.

a What sex is the baby? Explain how you know. - not done

b How many chromosomes does the baby have? 46

c How many chromosomes did the mother pass on to baby? 23

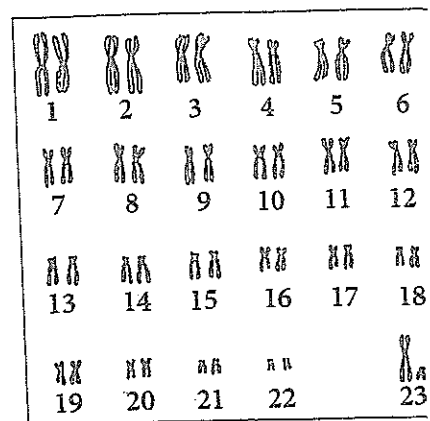
d How many chromosomes did the father pass on to baby? 23

e How many chromosomes are there in the mother's skin cells? 46

f How many chromosomes are there in the mother's eggs? 23

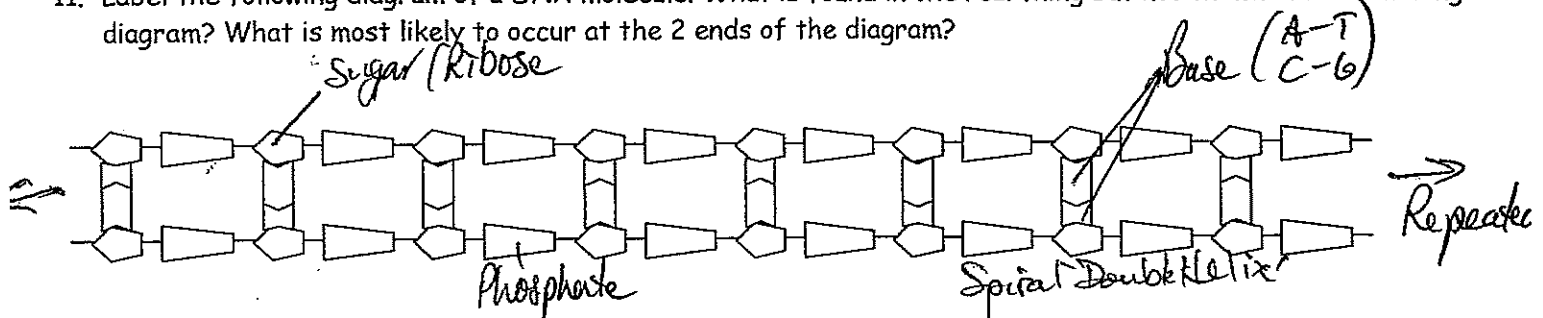
g How many chromosomes are there in the father's sperm? 23

h How many chromosomes are there in the father's skin cells? 46



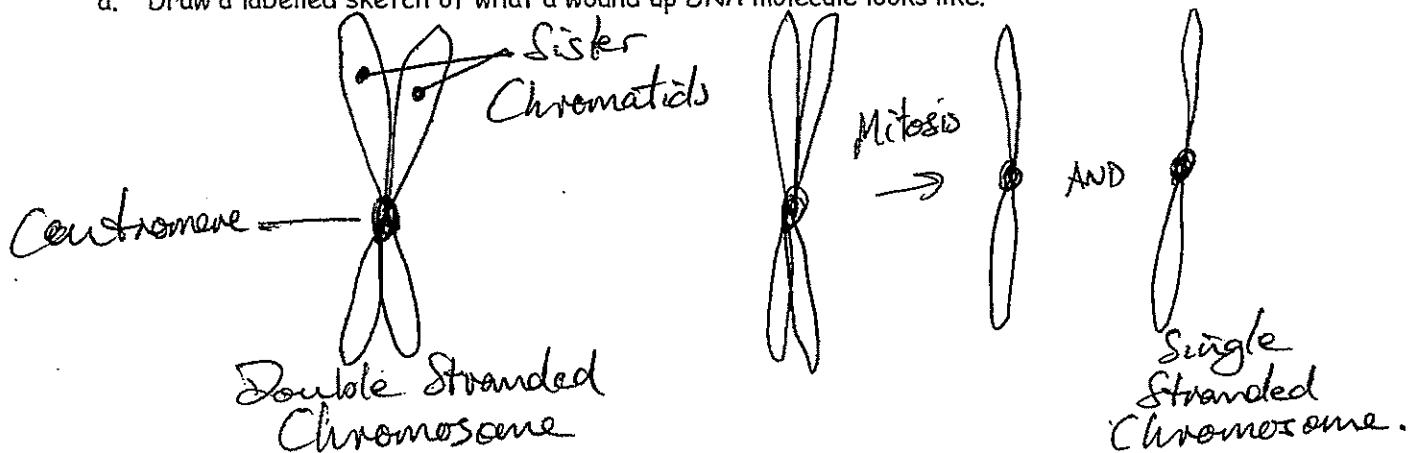
Karyotype of a human baby

11. Label the following diagram of a DNA molecule. What is found in the real thing but not shown in the following diagram? What is most likely to occur at the 2 ends of the diagram?



12. Wound up DNA does not look like the diagram in question 11.

a. Draw a labelled sketch of what a wound up DNA molecule looks like.



- b. Why are there 2 forms of DNA? One wound up and the other unwound.

Wound up when DNA needs to be shifted around.
Un-wound when the DNA (it's genes) needs to be used to change some functioning of the cell/body.

13. Fill in the following table which shows the difference between Meiosis and Mitosis.

	MITOSIS	MEIOSIS
WHERE OCCURRING	All body cells	Gonads - Ovary (♀) - Testis (♂)
No. OF DIVISIONS	One	Two
No. CELLS PRODUCED	Two	Four
HAPLOID/ DIPLOID CELL	Diploid	Haploid
USED FOR	Growth / Repair	Gamete formation.

2. Complete the following table on the function of cell organelles.

Organelle	Description	Function
CELL WALL	thick wall around a plant cell, rigid	Protects and supports the cell
CELL MEMBRANE	Thin, covering, protects cells	controls entry and exit of substances.
CYTOPLASM	chemical activities clear fluid in the cell	Pads and supports organelles inside the cell. Moves by cyclosis
NUCLEUS	Dense, ball shaped structure, contains DNA	Controls all activities in the cell
NUCLEAR MEMBRANE	outer wall of nucleus	Covers and protects the nucleus
NUCLEOLUS	Small dark area in the nucleus	in cells the export proteins
CHROMATIN	visible when cell is dividing	Provides instructions for the cells activities, (growth, reproduction)
ENDOPLASMIC RETICULUM	Clear, tubular system of tunnels throughout the cell	proteins assembled here smooth Endoplasmic reticulum allows substance to move within the cell.
RIBOSOME	occur on E.P.R. (look like dots)	Makes proteins
MITOCHONDRIA	Location in the cytoplasm, bean shaped	produce energy for the cell
VACUOLE	large structure found in plant cells	Storage tank for food, water, wastes or enzymes
CHLOROPLAST	Green structures that contain chlorophyll	convert sunlight into energy in plant cells
GOLGI BODY	large, ribbon like structure	Packages and secrets proteins for use in and out of the cell
CENTRIOLE	Small cylindrical	Not in test
LYOSOME	Small, round structures, containing enzymes	Digests older cell parts, food or other objects

3. What is the cell theory?