# Y9 Cell Biology Homework Grids

Name:	 	
Science Teacher:		

	Comment
Grid 1.1	
Grid 1.2	
Grid 1.3	
Grid 1.4	
Grid 1.5	
Grid 1.6	
Grid 1.7	
Grid 1.8	

Grid '	1.1	: l	Jse	KO	1-	2
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Due: \_\_\_\_\_

State the role of	f each of the	following	organelles
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Cell membrane .....

.....

Mitochondrion .....

.....

Ribosome .....

## Circle all the names of the organelles which are found in animal cells.

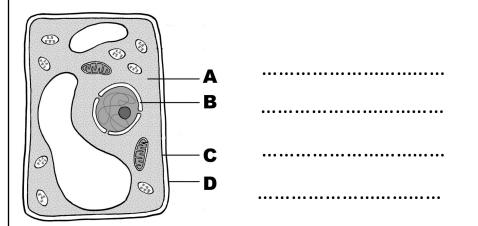
cell membrane ribosome

cell wall mitochondrion

cytoplasm permanent vacuole

chloroplast nucleus

#### Label parts A - D of the plant cell



#### Fill in the missing words

Plant cells contain chloroplasts which are used

for \_\_\_\_\_. They also have a permanent

vacuole filled with \_\_\_\_\_. The whole cell

is surrounded by a \_\_\_\_\_, which is

made of \_\_\_\_\_.

Grid 1.2: Use KO	3
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## Due: \_\_\_\_\_

Circle three terms to describe prok	aryotic cells	Compare prokaryotic and eukaryotic cells
Larger than eukaryotic cells		
Do not have a nucleus		
Contain a loop of DNA		
Contain chloroplasts		
Are surrounded by a cell wall		
Contain mitochondria		
This is a diagram of a prokaryotic cell.  Add labels to the diagram		
	Α	
	В	
. 90.	C	
	D	

Grid 1	.3:	Use	KO	3-5
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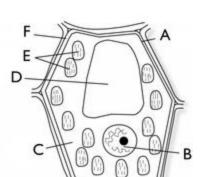
## Due: \_\_\_\_\_

Convert the following units:		Compare xylem and phloem cells
1000nm = mm		
4000nm = mm		
10000mm = m		
500000mm = mm		
500mm = m		
1m =nm		
Draw straight lines between the two colu	umns to link the feature to its role in a	
specialised cell		
Mitochondria in sperm cells	digest a pathway to the egg cell	
Lots of dendrites in nerve cells	can be converted into glucose	
Glycogen store in muscle cells	provide energy for movement	
of tail	premie energy recommend	
Mitochondria in muscle cells other cells	enable lots of connections with	
Enzymes in the acrosome of sperm cells	s provide energy for contraction	

## Grid 1.4: Use KO 1, 6

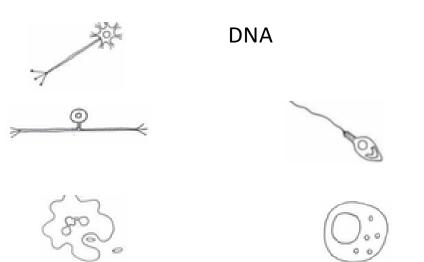
### Due: \_\_\_\_\_

Match the letter with the feature to label the diagram of the plant cell



- A. ....
- B. .....
- C. .....
- D. .....
- E. .....
- F. ......

Label the location of the DNA in each of these cells



State the number of chromosomes in each cell

type of cell	chromosome number
Human skin cell	
Human sperm cell	
Human egg cell	
Human liver cell	
Human zygote	
Human nerve cell	

Rearrange the following into size order, starting with the largest

- A. Gene
- B. Nucleus
- C. Cell
- D. Chromosome
- E. Organ

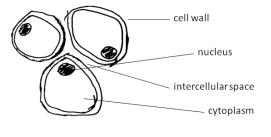
largest

- 2. ......
- 3
- 4. .....
- smallest 5. .....

## Grid 1.5: Use KO 7, 30

Due:	
Due:	

List three errors made by the student who produced this biological drawing



2. .....

3. .....

The student looked at a cell using a microscope.

The image width of the cell was 40 mm

The real width of the cell was 0.1 mm

Calculate the magnification of the cell.

Magnification =

Calculate the image width of the same cell, if the magnification was 1000.

Image width = .....

#### Produce a biological drawing of this animal cell



Grid	1	6.	U	lse	KO	7
GHU		.U.	u	<b>3</b> 5	$\mathbf{I}$	

Due:	

Stem cells are	cells. This means that they
have not specialised for p	particular roles. Stem cells from
human	. can specialise into every type of
human cell	stem cells can specialise into
many different types of co	ell.

ln m	edicine, a patient's own stem cells can be used to treat
som	e diseases. One advantage is that these cells are not
	by the patient. This technique is called
	cloning.

#### Higher



The average diameter of a real red blood cell is 0.008 millimetres.

On the photograph, assume the diameter of the red blood cell image is 100 millimetres.

Calculate the magnification of the photograph.

magnification =

Stem cells can be obtained from human embryos.

Evaluate the use of stem cells from a patient's own

bone marrow instead of stem cells from an embryo.

Give a conclusion to your answer.

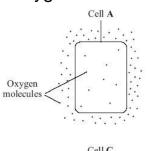
List three substances which diffuse in or out of cells

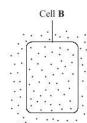
2. .....

3. .....

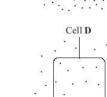
The diagrams show cells containing and surrounded by oxygen molecules.

Oxygen can move into cells or out of cells.





Into which cell, **A**, **B**, **C** or **D**, will oxygen move the fastest?



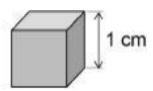
Explain your answer.

	-			-					•								•		

#### Higher

The diagram below shows two model cells.





Describe how the surface area to volume ratio changes as the length of the side of the model cell increases.

You should include calculations in your answer.

| <br> |  |
|------|------|------|------|------|------|------|------|------|------|------|--|
| <br> |  |
| <br> |  |

.....

Grid 1.8: Use KO 8	Due:
List two features of good exchange surfaces in <b>both</b> plants and animals  1	Higher The young stages of frogs are called tadpoles. The tadpoles live in fresh water. The drawings show a tadpole just before hatching and three days after hatching. Structure X helps in the
2	exchange of substances between the tadpole and the water.
The average number of alveoli in each human lung is 280 million. The average surface area of 1 million alveoli is 0.25 m².  Calculate the total surface area of a human lung.	Suggest how the changes in the tadpole shown in the drawings help it to survive as it grows larger. You should <b>not</b> refer to movement in your answer. You should refer to structure <b>X</b> .
<ol> <li>An athlete trains to run a marathon. The surface area of each of the athlete's lungs has increased to 80 m². Give one way in which this increase will help the athlete.</li> </ol>	

3. List two **other** factors which increase the diffusion rate.

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