

**East Renfrewshire Council: Education Department
Practitioner Moderation Template**

Prior to the moderation exercise, please complete the following information and submit it to your facilitator with assessment evidence from one learner that you judge to have successfully attained the Es' and Os'.

Experiences and Outcomes:

- Using a microscope, I have developed my understanding of the structure and variety of cells and of their functions.
SCN 3-13a

- I can consider the impact that layout and presentation will have on my reader, selecting and using a variety of features appropriate to purpose and audience.
LIT 3-24a

Learning Intentions:

- To investigate the structures found in animal and plant cells.
- To explore the functions of structures within animal and plant cells.
- To explore the main similarities and differences between animal and plant cells.
- To investigate the structure and function of a specialised cell.
- Using literacy skills, research a specialised cell and use a variety of presentation techniques.

Success Criteria:

I can:

- Successfully use a microscope to view different types of cells.
- Name and identify structures with animal and plant cells.
- Describe the functions of structures within animal and plant cells.
- Identify the main similarities and differences between animal and plant cells.
- Identify a specialised cell and explain why its structure is specialised to its function.
- Investigate a specialised cell and produce an information display using literacy skills including a variety of presentation techniques.

Briefly outline the context and range of quality learning experiences that have been provided making reference to the chosen design principles.

- The pupils participated in a series of lessons based on investigating varieties of cells and cell structure.
- These lessons were coherent, linking science and literacy experiences, working towards a final outcome (end of unit assessment).
- Pupils were challenged to contribute towards success criteria on a number of activities (3D model cell; literacy task).
- There were a number of activities within the series of lessons that allowed personalisation and choice (interpretation of model cell; choice of microorganism research).
- Pupils were encouraged to identify relevant links to “everyday science” within the series of lessons – most pupils were able to discuss at least one link (e.g. specialised cells in *our bodies*).
- A number of tasks within the series of lessons (particularly the research tasks) showed depth, which allowed pupils to develop their full capacity for thinking and learning and permitted pupils to, if possible, achieve more advanced levels of understanding.
- All pupils participated in experimental lessons (microscopes) which have allowed their practical skills to be assessed and developed. In addition to this, development of their research skills has been monitored.
- There have been many opportunities for pupils to peer and self-assess their work, and on completion of this section pupils will be interviewed to identify their next steps, as well as participate in a focus group.
- All pupils completed “Cells” end of topic assessment.

Record the range of assessment evidence that was gathered to meet the success criteria (Say, Write, Make, and Do) considering breadth, challenge and application.

- Evidence 1 – Jotter work;
- Evidence 2 – Learners’ interpretation of 3D cell model;
- Evidence 3 – Literacy task;
- Evidence 4 – Feedback sheet.

Briefly outline the oral/written feedback given to the pupil on progress and next steps, referring to the learning intention and success criteria.

Oral feedback

- All pupils given continual oral feedback throughout series of lessons.
- This pupil received positive oral feedback on their thoughtful and knowledgeable contributions when discussing the importance of why we need a variety of cells.
- During “Using a microscope” experiment this pupil was praised for following instructions as per the protocol, but was encouraged to become more confident when working with equipment, as was the case with other pupils.
- Oral feedback given to the class on the overall standard of work produced in research tasks.

Written feedback

- Written feedback given to individual pupils for their research report.
- Success criteria issued for research work. If pupil covers success criteria then this is ticked off.
- As well as oral feedback for assessment, pupils are given a personalised written feedback sheet and asked to complete self-assessment sheet.

Pupil Voice:

What have you learned? How did you learn? What skills have you developed?

See attached.

Did the learner successfully attain the outcomes? YES/NO

07/06/17

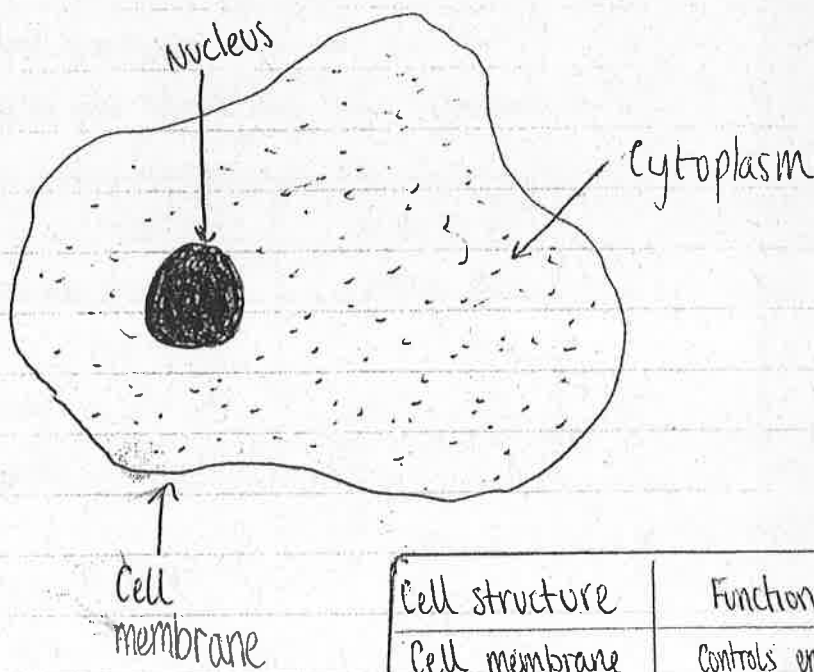
1.1 An introduction to cells

Cellular structure -

- Cells are the living units from which all organisms are made
- Simple organisms have only one cell and are unicellular e.g. bacteria.
- Other organisms have many cells working together and are multicellular, e.g. humans.

9/6/17

Animal cell structure



Cell structure	Function
Cell membrane	Controls entry/exits of sub
Cytoplasm	Site of chemical react
Nucleus	Controls cell activity and
///////	Contains genetic informe

12.6.17

Microscope

Human Blood smear -



onion cell -

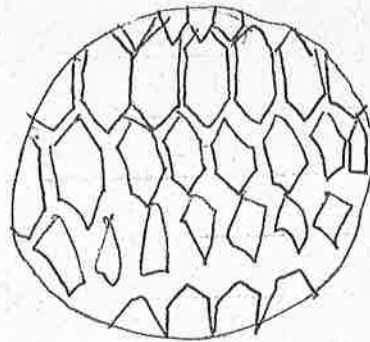


Emma's cheek cell -



14.06.17

Measuring cell size



400 micrometres

$$400 \div 8 = 50 \text{ micrometres}$$

Magnification

- a) x50 ✓
- b) x10 ✓
- c) x20 ✓



Great Work
Keep it up!



Learning
Intention
achieved

EVIDENCE (2)



Plant cell model commentary

Pupil researched and produced a palisade mesophyll cell.

Presented to class their model along with information about this specialised cell.

The following points were included:

- These cells are found in the leaves of green plants;
- They are used for photosynthesis (the process of a plant "making food");
- Contains lots of chloroplasts (which were pointed out during presentation);
- Chloroplasts contain chlorophyll; which is the "chemical needed for photosynthesis";
- "Having lots of chloroplasts is a specialised feature which allows the plant cell to do its' job").

UNICELLULAR ORGANISMS RESEARCH TASK

- ✓ Choose one example of a unicellular organism (single celled organism).
- ✓ The organism can be from the following groups of single celled organisms: bacteria; algae; protozoa or fungi.
- ✓ Include a labelled drawing of the organism.
- ✓ Write a paragraph describing its habitat (where it lives), how it obtains its food and any specialised structures it has to help it survive.
- ✓ You should also make notes on any effects that the organism has on human society. e.g. Can it be used to make useful products or is it used in any scientific processes? Does it cause illness?
- ✓ Write a list of references you used at the end.

EVIDENCE (3)

Yeast Cells

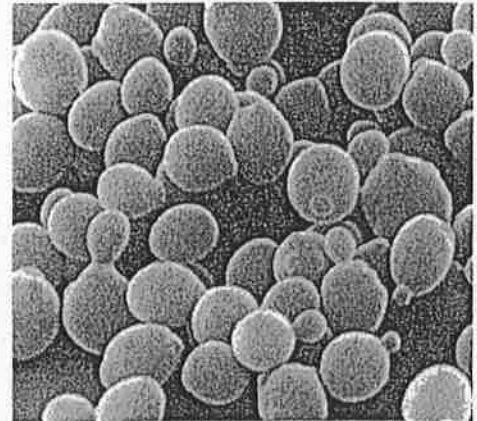
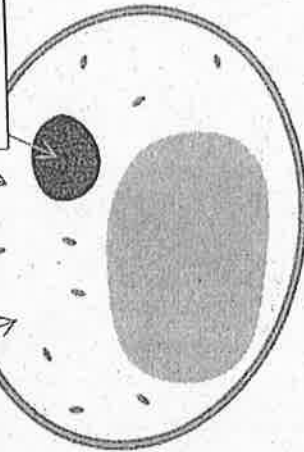
Abbie Shaw



Cell wall

Cell membrane

Mitochondria



Habitat;

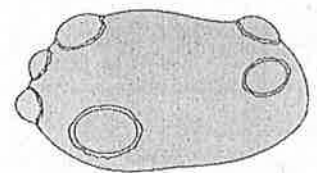
Yeast cells are widely distributed and are mainly found on sugary substances e.g. fruit, milk, cakes etc... They also thrive in the nectar found in flowers and plants.

How does it obtain food?;

When they get onto their food, like a berry, they eat the starch and sugar and let out carbon dioxide which can be put in certain drinks to make them fizzy.

Does it have structures to help it survive?;

The nucleus contains DNA (genetic information), the cell membrane allows gases and water to pass in and out of the cell as well as controlling the passage of other chemicals and the cell wall maintains the shape of the cell.



Effects on human society...

We use yeast cells in bakeries to make bread, cakes and other foods, they are used to make champagne fizzy, as they let out carbon dioxide

Websites; BBC Bitesize, biologydiscussion.com



* Really good work
A very well presented piece
of research, with some great
information
- Next steps - include the full
URL references (it's good practice!)

EVIDENCE (4)

National Biology

Name _____ Class 3h

1.1 Cells Test Evaluation Mark..... 25/30 33.3%

Question	Description	Mark	Area of strength	Area for improvement
Section 1				
1	Relate plant cell structure to the effects of osmosis	1/1	✓	
2	Identify facts about microbial cells	1/1	✓	
3	Show understanding of active transport	1/1	✓	
4	Describe the osmotic effect of dilute solution on animal cells	0/1		✓
5	State the function of ribosomes	1/1	✓	
6	Calculate percentage increase (PS)	0/1		✓
7	Use division to calculate average cell width (PS)	1/1	✓	
8	Calculate an average (PS)	1/1	✓	
9	State the function of mitochondria	1/1	✓	
10	Predict the effect of osmosis on plant cells (PS)	1/1	✓	
Section 2				
1	Identify cell structures from diagram	3/3	✓	
2	Identify the role of cell structures	1/1	✓	
3	Identify a substance that enters cell by diffusion	1/1	✓	
4	Identify a substance that exits cell by diffusion	1/1	✓	
5	Description of osmosis	3/3	✓	
6(a)	Show an understanding of osmosis	0/1		✓
6(b)	Calculate change in mass (PS)	2/2	✓	
6(c)	Select data from table to show understanding of osmosis (PS)	1/1	✓	
6(d)	Identify the independent variable (PS)	0/1		✓
6(e)	Identify a constant variable (PS)	1/1	✓	
7(a)	Draw a line graph (PS)	2/2	✓	
7(b)	Use data from graph to show an understanding of osmosis	1/1	✓	
7(c)	Understand potential sources of error (PS)	0/1		✓
7(d)	Understand the need for experimental reliability (PS)	1/1	✓	

Pupil comment- What I did well / How can I improve Just keep on studying. I did lots but I need to just keep on doing it. Not that happy with my result.

Teacher comment Don't be too hard on yourself! Great job!

Parent/guardian comment

Parent/guardian signature _____ Date 15/09/2017