



Let's Talk

Stem Cells

Teacher Guide



This activity provides teachers with a resource which supports an understanding of stem cells and how they can be used therapeutically and a discussion activity which raises some of the issues relating to stem cells.

Curriculum links

The CfE science outcomes most closely associated with this topic are:

- By researching cell division, I can explain its role in growth and repair and can discuss how some cells can be used therapeutically - *SCN 4-13a*.
- I can debate the moral and ethical issues associated with some controversial biological procedures - *SCN 4-13c*.
- I have researched new developments in science and can explain how their current or future applications might impact on modern life - *SCN 4-20a*.
- Having selected a scientific theme of topical interest, I can critically analyse the issues and use relevant information to develop an informed argument - *SCN 4-20b*.

The principles and practice document asks teachers to use activities which encourage young people to:

- make informed personal decisions and choices;
- express opinions and show respect for others' views;
- develop informed social, moral and ethical views of scientific, economic and environmental issues;
- be able to read and understand essential points from sources of information including media reports;
- discuss and debate scientific ideas and issues.

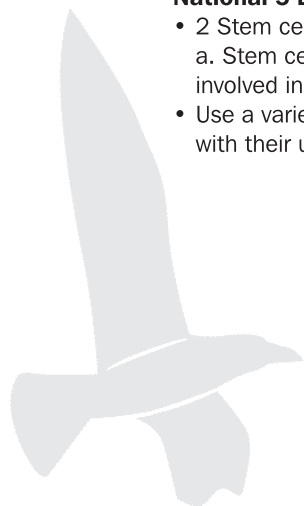
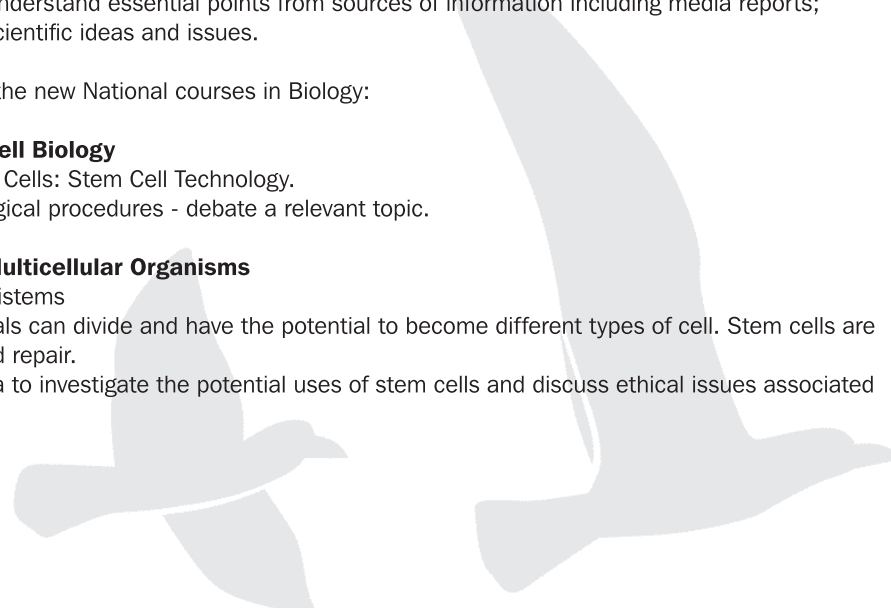
This resource supports the new National courses in Biology:

National 4 Biology - Cell Biology

- 3. Therapeutic Use of Cells: Stem Cell Technology.
- 8. Controversial biological procedures - debate a relevant topic.

National 5 Biology - Multicellular Organisms

- 2 Stem cells and meristems
 - a. Stem cells in animals can divide and have the potential to become different types of cell. Stem cells are involved in growth and repair.
- Use a variety of media to investigate the potential uses of stem cells and discuss ethical issues associated with their use.



Lesson plan

There are 3 parts to the activity:

Part 1 - What are Stem Cells?

After an introduction to the topic of cells, the pupils need to gain some understanding of what a stem cells is and to appreciate that there are different types of stem cells. Background Information is provided.

The teachers might divide the class into groups of about 5 or 6 pupils. Each group could be given a Stem Cell Help Card, one person in the group would read out the help card and the group would then discuss the information. Alternatively, the teacher reads out the help card and explains it to the class so that a basic understanding of stem cells is established. The pupils then complete the first 2 sections of the pupil sheet.

Part 2 - What is the range of opportunity and opinion?

In groups the pupils are going to learn more about the stem cells debate. Each group is given a set of 6 reports and each pupil takes a report, reads it and explains it to the group.

Each pupil summarises what they find out in the grid provided.

Part 3 - How might it feel to be involved?

Now still in groups one pupil reads the Stem Cell Story to the group. The group then use the people cards to identify one card for each person in the story and place them on the table.

Then the group complete the ethical matrix grid.

Can you say what the main dilemma is?	Who are the people who should make the decisions?	What are the possible solutions?	Can you justify the best solution?

