



Lesson Plan: How Far We've Come

Topic: Brain tumour treatment

Subject | Stream:

Biology

Science

History

Grade Level: Intermediate | Grades 7-10

Objective(s):

To explore the developments made in relation to brain tumour research.

To identify the different treatments made available over the years for individuals with brain tumours.

Brief Summary:

Two options for this lesson plan:

1. In small groups, students will be asked to research about a brain tumour treatment available in Canada and give a ten-minute presentation to their class.

Or

2. Students can be asked to individually create a brief research paper on their findings.

Background Information:

Treatment and research with regards to brain tumours have developed significantly over the years and is a huge advancement in the medical field.

Students will gain an appreciation for the different types of treatments and advancements in brain tumour research.





Activity Instructions:

Presentation Option

Step 1: Students are to be assigned into groups of four.

Step 2: Each group is to pick one of the following topics or can pick a topic of their choice, if it is approved by the instructor:

- Surgery
Topics could include partial vs. full resection, inoperable surgery, wait and see approach, or the new 5-ALA Fluorescence Guided Surgery
- Chemotherapy
Topics could include the first-line chemotherapy treatment in Canada for malignant brain tumours called Temozolomide or side effects of chemotherapy.
- Radiation therapy
Topics could include any of the different types of radiation therapy including Gamma Knife, Stereotactic Radiosurgery, MR Linac, or side effects of radiation therapy.
- Other topic chosen by the students & teacher.

Step 3: The following topics should be discussed in presentations:

- Introduction – overview of treatment of study
- Significant developments – timeline | history of this type of treatment
- Limitations
- Current use (whether this treatment is still preferred in modern medicine)
- Significance to brain tumour treatment

Step 4: Given a week's time, students should have researched sufficient information and be ready to present. If not, teachers can give students an extra day or two.

Step 5: Groups are to create a presentation with the information they have collected. These presentations should not last more than 10 minutes. Each student should present for roughly the same length of time within a group.





Research Paper Option

Step 1: Each student is to pick one of the following topics or can pick a topic of their choice, if it is approved by the instructor:

- Surgery
Topics could include partial vs. full resection, inoperable surgery, wait and see approach, or the new 5-ALA Fluorescence Guided Surgery
- Chemotherapy
Topics could include the first-line chemotherapy treatment in Canada for malignant brain tumours called Temozolomide or side effects of chemotherapy.
- Radiation therapy
Topics could include any of the different types of radiation therapy including Gamma Knife, Stereotactic Radiosurgery, MR Linac, or side effects of radiation therapy.
- Or another topic chosen by the students & teacher.

Step 2: Students are to write a two-to-three-page research report on their specific topic. The following topics should be discussed:

- Introduction – overview of treatment of study
- Significant developments – timeline | history of this type of treatment
- Limitations
- Current use (whether this treatment is still preferred in modern medicine)
- Significance to brain tumour treatment

Step 3: Students are to format their paper as such:

- Font: Times New Roman or Arial, 12
- Each heading should be in the same font, size 14
- Double spaced
- Appropriate title
- MLA or APA citations

