

Cancer Research Project

Contact Information

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Introduction and Description of the Lesson

The “Cancer Research Project” is the first major project that the 10th grade students will participate in during their second year in the Health Path program. The project serves several purposes within our integrated program. In addition, the project serves as the baseline research project that will be used to assess student improvement over the next three years. Prior to graduation, the students will be expected to complete a Senior Project that has a strong Health/Medical emphasis and the Cancer Research Project is one of the steps in their preparation for this culminating event.

The first part of the project, the students complete a family medical history and pedigree where the students identify potential genetic conditions preexisting in his/her family – particularly cancer. From this point, the students are “diagnosed” with a type of cancer based on student interest and family history. Each student then begins the process of writing a traditional I-search paper from the perspective of a patient that has been newly diagnosed. During the research process the students will investigate the whole picture of cancer; physical, emotional, spiritual, financial... They will access local resources as well through interviews and in class guest speakers. The final evaluation is an oral presentation presented to a panel of local cancer “experts” (survivors, doctors, nurses, Hospice, American Cancer Society Coordinator). Upon completion of the formal report/presentation the students then plan a trip to UCSF Medical center where they will deliver “goodie” bags they put together for children going through cancer treatments as well as observing cancer research in action.

Instructional

Preparation

Before beginning the project, the teacher should introduce the topic of cancer briefly and discuss personal issues/stories of individual students’ relationship to cancer. Typically in the introduction I include a very brief description of the following: what is cancer, history, types/classifications statistics and treatments. Students then are asked to complete a family medical history and pedigree. I obtained sample forms from UCSF for the students to complete. Upon completion of the medical history, students are then “diagnosed.”

Once diagnosed the students then set to begin the formal research aspect of their type of cancer (meeting English, Science, and Health Standards). They go thru a series of prewriting, accessing data using the local libraries, contacting cancer hotlines, using the web, and other sources such as

books, magazines, scientific journals. Once the students have a base knowledge of their cancer they then conduct 2 interviews with community members that are directly connected to cancer i.e.: oncologist, cancer patient, survivor, nurse, Hospice..... In addition to the interviews they also investigate what local resources are available to cancer patients and their families beyond the medical/physical aspect of the disease. The next step is for them to research the financial impact of the disease. Upon completion of the above they are then asked to pick submit their choice of a treatment plan. With the help of a local nurse and /or physician the student's treatment plan is evaluated and they reflect on the outcome and what to do next in their life as a cancer patient.

In addition to the student's access community resources I contact the following speakers to come present to the class: Tobacco Education Specialist, American Cancer Society Coordinator, Oncologist, Radiation Oncologist, a cancer survivor panel and Hospice of Humboldt. These speakers are also asked to come back at the end of the project to sit on the presentation panel to assess students' final presentations.

Health State Framework Expectations

Students will demonstrate ways in which they can enhance and maintain their health and well-being.

Students will demonstrate behaviors that prevent disease and speed recovery from illness. Students will understand the variety of physical, mental, emotional, and social changes that occur throughout life.

Action

Student will be accountable to have a high quality final oral presentation with visual aids that will be presented to a panel of local medical professionals and cancer survivors. After having "cancer" for a semester students will become connected to this disease in a whole new way – understanding how important personal lifestyle choices throughout their lives are in preventing this disease, seeing the whole professional/medical circle of support for cancer, possible volunteer opportunities in the community and how they can personally make an impact in the fight against cancer.

To prepare the students for their interviews in the community I have the class brainstorm a list of possible questions to ask and each student has to submit a sample of their interview questions prior to their interview.

Their presentations are assessed using a rubric that they have in advance. The class typically spends one day/week during class time working on their research/presentations.

During the second semester the students then begin planning their trip to UCSF. Teachers should make the contacts to the medical facility of choice to set up dates and options for the students once at the site, transportation for the students, and lodging. Students wrote letters to local business/organization asking for financial support for our trip and/or donations for the "goodie" bags we were going to deliver to children at the cancer center. The students organized committees for their trip and with a little adult facilitating they handled the rest.

Reflection

Students participate in prewriting, weekly journal entries related to cancer, weekly check off sheets, discussions, rubric assessment, and a final essay reflecting on their complete experience as a cancer patient. In addition they write thank you letters to each resource person/place accessed during their project.

Student Assessment

Students will be assessed in a variety of ways through the process. First, traditional methods of a test will be administered to check for general knowledge of cancer. Second, a check off list is used weekly to chart student's progress during the project. Points are subtracted for late work. Next the students written research paper is graded on content covered and the final presentation being assessed using a rubric.

Project Evaluation and Expansion

The individual teacher assesses the written aspect of the project using traditional methods. In addition the teacher also assess the impact the project has on students through feedback from our guest speakers, presentation panel, and local community resources accessed. Another idea would be to have students take a formal project evaluation. I have only had an informal discussion related to this area with students.

The oral/visual presentation aspect is assessed once again by a panel of local medical professionals.

Celebration and Public Recognition

Having our local community directly involved in the process as well as the assessment has allowed our students to become publicly recognized by word of mouth about the project itself and the students' quality work as well. In addition all students submit their work into our school's academic fair where they usually receive high honors. The trip to UCSF is also a time of great celebration and fun for the students.

Materials and Staff Development Needs

I have attached a sample of my check off sheet, family medical history/pedigree, rubric and a few other items used during this project you may find helpful. I also show a couple videos during the project – The War on Cancer, Lance Armstrong Medical Profile (from the Discovery Channel), Fry Now – Pay Later, in addition to using updated videos from the local American Cancer Society. For many students' presentations power point is used so we have to get all the needed equipment set up in class as well.

Staff development includes general networking of the teacher and numerous cancer resources in the community.

Funding, Resource Support, and Sustainability

The resources necessary for this project are access to research materials, computers, audio/visual equipment, and videos listed above. Except for our trip to UCSF and our "goodie" bags we don't any financial needs. For our trip and bags funding could be found through local businesses/organizations, small grants, and class fundraisers.

Cancer Research Project Check Off List

1. Cancer **prewriting** including a webbing, cluster, outline etc ... 9/9

2. Complete a **family medical history and pedigree** - identify potential genetic conditions preexisting in his/her family - particularly cancer.
Going back to at least your grandparents and if at all possible beyond that.
9/16

3. **Answer** the following questions once you have been "diagnosed" with a specific type of cancer: 9/23
 - State what you already know about your type of cancer.
 - What questions do you have about this type of cancer that you don't know the answer to at this point?
 - When you found out you had cancer, how did you feel and what did you expect would happen?
 - Whom would you tell? Why? You may choose to describe a conversation or you may reflect on what it would be like to share this information with a loved one.

4. Complete **resource list** 9/30
Begin resource/bibliography now - keep track of all resource info

Collect possible resources from the following areas:

- a. **Primary source** - that means someone who has first hand information about cancer. List ideas of whom you are going to contact. Examples: doctor, patient, survivor, or someone who cared for someone with cancer. You will need at least two of these (@ least one must be a non-family member)

- b. You must identify one of the "**cancer hotlines**" to contact. You need to make sure that you know specifically what information you will need.

So write out your questions prior to calling. Call numbers that are meant to educate people do **not** call numbers that are reserved to patients only.

- c. At least two sources must be from the **Internet**
- d. At least **4 other sources** should be from books, magazines, and scientific journals.

5. Complete notes from **3 sources** - look to answer the 10/7 following in your research - you may find that one resources deals with only 1 of the following questions - that is okay. But you need to be **detailed and comprehensive** in answering the following questions.

- Risk factors! What are the major risk factors that contribute to your type of cancer?
- Possible causes (genetic and environmental)
- Symptoms, age groups, and genders most affected by your type of cancer.
- What tests need to be done in order to determine that you have cancer? And what are the procedures of each test?
- Description and location of tumors - what stage are the tumors?
- How does your type of cancer develop and metastasize?
- What are your treatment options including chemotherapy, radiation, complementary medicine, surgery, new experimental drugs, vaccines, or other therapies?
- List all potential side effects for each of the treatments.
- Financial impact/aspects of your disease (insurance/medicare)

6. Complete notes from **3 more resources and call cancer hotline** and have them send you information related to the questions you have for them about your type of cancer (See above). Make appointments for your interviews and check off with me.

10/14

7. Complete notes from **2 more resources and a list of questions** to ask 1 primary resource. You need to add to your previous notes and put them into

a rough draft format. Make sure you are continuing to keep track of your works cited.

10/21

8. Complete notes from **2 more sources and a list of questions** to ask another primary resource. You need to add to your previous notes and put them into a rough draft format. 10/28

9. **Notes** from your primary resources - interviews. You need to add to your previous notes and put them into a rough draft format. 11/4

10. **WORKDAY** - put it all together -rough draft 11/12

11. What are the financial aspects of your disease? Who pays for what? Does your insurance company cover all costs? What if you are elderly - what does medicare cover? This will probably effect what you choose for #13. What services will you have to have, want to have, need to have and how will they be paid for

12. Select a **treatment plan** for your type of cancer and discuss it in detail. It can be a combination of therapies, but you must justify why you are selecting this treatment. 11/18

13. ? What resources are available in our **local community** beyond the medical aspect? What do they offer? Why are they important to the patient and family? Example: Hospice of Humboldt - You must call all around to get specifics. 12/2

14. Your oncologist, Dr. _____ will tell you whether your selected treatment is successful. Where do you go from here: You have found out if your treatment is working or not, now how does your story end? Looking over time with cancer, what have you learned? Would you have done anything differently? Would you have made/make any lifestyle changes? What would they be? If your treatment does not work, what is your next step? 12/9

15. **Final draft** of research paper 12/16

- a. Introduction 2-3 pages - questions from #2&3
- b. Body - approx. 5 pages - questions from #5-12
- c. Conclusion - 2 pages - questions #13

15. Putting it all together: **visual display** for your presentation to local physicians i.e.: PowerPoint, display board,

1/6 & 1/13

16. **Dress Rehearsal** for presentations

1/20

17. Presentations

1/22-24

Family Medical History and Pedigree

I would suggest doing this with your parent(s) and calling other needed family members to get complete information.

Draw a “regular” family tree including in this order: Mother’s parents, Father’s parents, your mother and her siblings (your aunts and uncles), your father and his siblings (your aunts and uncles), all descendant of Mother’s sibling (your cousins), all descendants of Father’s siblings (your cousins), you and your siblings and any siblings of theirs (your nieces and nephews).

On your tree – males are on the left side females on the right side and put ages under each person (if deceased put age of death) if age is unknown put ? – oldest sibling on the left. Note squares are males and circles are females.

Family Medical History

You will need to sit down with your parent(s) to complete the following family medical history. Completing this will help you throughout the following semester when we discuss specific genetic/hereditary medical conditions. In addition it is important for each of us to personally know our medical backgrounds for the purpose of taking charge of our own health and fitness.

Draw a “regular” family tree that includes: Mother’s parents, Father’s parents, your mother and her siblings (your aunts and uncles), your father and his siblings (your aunts and uncles), all descendants of Mother’s siblings (cousins) and descendants of Father’s siblings (cousins), you and your siblings and siblings of theirs (your nieces and nephews).

On your trees distinguish males with a square and females with a circle. Also include ages of all persons on the tree. If a family member is deceased – put age of death and cause within the shape. Have yourself distinguished as a star on the tree.

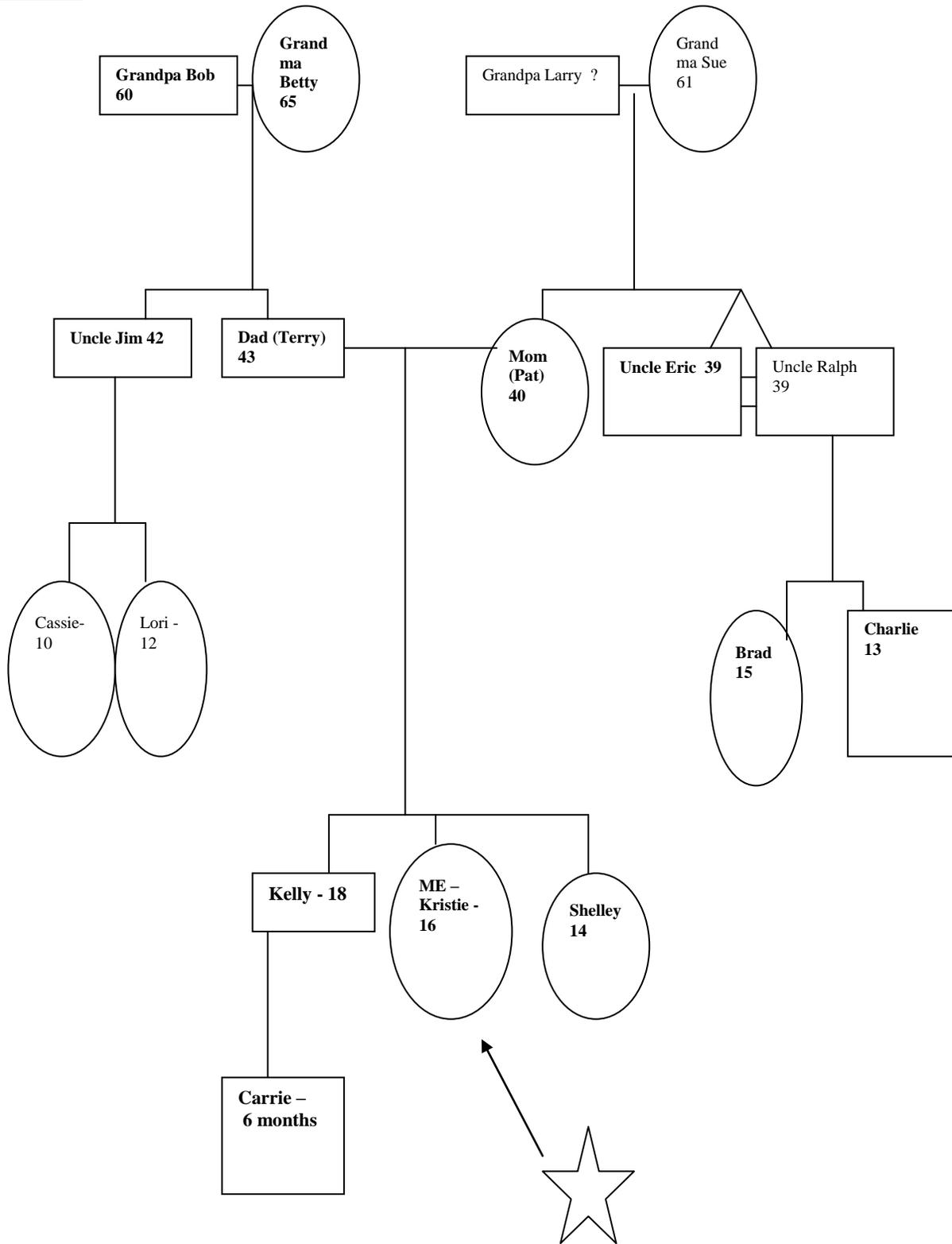
Inquire with every individual on your family tree to see if they have been diagnosed with any of the following:

- Heart disease
- Cancer (specific type)
- Diabetes
- Alzheimer's Disease
- Substance Abuse - Alcoholism
- Other Genetic Diseases within your family?

If any member has any of the above distinguish which within the shape (circle/square).

After you complete your family tree write a page summary of what you discovered about your family’s medical history and thoughts about your personal medical pedigree.

SAMPLE



CANCER WORKSHEET

Instructions: Using a separate piece of paper answer the following questions.

Assignment #1

1. What is cancer?
2. Why is it difficult to determine what the original causes of cancer are?
3. What is a carcinogen?
4. List some known carcinogens.
5. How serious is cancer in the United States?
6. What are 4 classifications of cancer and what are they?
7. What is the difference between a malignant tumor and a benign tumor?
8. What are the "basic" steps of cancer development?
9. What is meant when we say that a tumor had undergone metastasis?

Assignment #2

1. What percentage of lung cancer victims are or were smokers?
2. Name 4 dietary factors that link strongly with high cancer risks.
3. What are the 8 warning signs of cancer?
4. Briefly discuss the 3 basic types of cancer treatments.
5. List some "anti-cancerous" foods.
6. Given the severe side effects that result from many treatments, why do you think people subject themselves to these treatments. What is your opinion on medical marijuana for cancer patients?

Assignment #3

1. What are some "protective" and "preventable" risk factors against skin cancer?
2. What are 4 signs and symptoms of skin cancer?
3. What are the most common sites of cancer in males? In females?
4. What are 3 types of skin cancer?
5. What is solar/actinic keratosis?

Assignment #4

1. Why is BSE and TSE so important?
2. What age group is at the highest risk of developing testicular cancer?
3. What are some treatment options for breast cancer?
4. What role does genetics play in many types of cancer?

Presentation Rubric

	1	2	3	4	Total
Content and Subject Knowledge	Student does not have a grasp of information; student cannot answer questions about subject.	Student is uncomfortable with information and is able to answer only rudimentary questions. Vocabulary was limited and lots of details mission.	Student is at ease with expected answers to questions, but fails to elaborate. A great deal of information connected to topic is presented.	Student demonstrates full knowledge (more than required) by correctly answering questions with explanations and elaboration. Added supportive details to main points. Vocabulary was strong and varied.	
Delivery	Inaudible or too loud; no eye contact; rate was too fast/slow; speaker seemed uninterested and showed little enthusiasm.	Some mumbling; little eye contact; uneven rate; little or no expression.	Clear articulation but not as polished.	Poised, clear articulation; proper volume; steady rate; good posture and eye contact; enthusiasm; confidence.	
Organization	Audience cannot understand presentation because there is no sequence of information.	Audience has difficulty following presentation because student jumps around a lot.	Student presents information in logical sequence which audience can follow.	Student presents information in logical, interesting sequence which audience can follow.	
Presentation Aids	No presentation aids were used.	Presentation aids were used occasionally but rarely supported the presentation.	Presentation aids related to presentation and were used well.	Presentation aids improved/reinforced/enhanced the presentation. Aids were attractive, easily viewed/read, creative and relevant. Overall student's aids explain and reinforce the presentation.	
Creativity	Repetitive with little or no variety; insufficient use of aids and note cards.	Little or no variety; dull presentation. Doesn't attempt to capture audience's attention.	Some originality apparent; good variety and blending of materials/aids.	Very original presentation of material; captures the audience's attention well.	

