

Family Secrets

A Problem-Based Learning Case

Part 1

A Family Disease

Family Secrets

Part 1 A Family Disease

Narrator: Jenny woke with a headache. She was relieved that she didn't have to go to school today. Her mother was going to take her to see the doctor this morning. As she dragged herself into the shower, she started thinking about her grandmother. It had been a month since Grandma died, but she still thought about her every day.

Talking to people at the funeral had brought back memories of the good times before her grandma had gotten sick. Her grandmother had always been an important part of her life. Jenny sighed as she remembered how difficult the last five years had been for her grandmother and the family.

She wondered what had caused Grandma's disease. Her parents and grandmother had really never explained much about the illness. Jenny had just overheard bits and pieces about something called Huntington's disease. She'd watched helplessly for five years as her Grandma kept getting worse and worse.... Jenny was thankful that Grandma wasn't going to suffer any more.

Jenny wasn't in the mood for breakfast or conversation, but she headed for the kitchen.

Mom: Listen Jenny, It was hard for all of us to watch Grandma suffer like she did. I know you really don't want to see the doctor today, but is important for you to get tested for Huntington's disease.

Jenny: Mom, can we not talk about this?

Mom: I've been telling your dad to get himself tested, so we know what to do about you and Jeremy. But no! He said he does not want to know....

Jenny: Mom, can we not bring up Dad again?

Mom: I don't want to bad-mouth your father, but I really don't understand him. I guess that's one of the reasons why we're divorced....

Jenny: Mom, I really do NOT want to hear about all this again! I'll go for the testing.

Jeremy: How come Jenny doesn't have to go to school, and I do?

Mom: Because she has a doctor's appointment. Now, eat your breakfast. Remember today's your 8th grade picnic and I didn't want you to miss that. We'll wait to see how Jen's tests come out before we take you to get tested.

Jeremy: What kind of test do I need to take?

Mom: Never mind Jeremy. You'll miss the bus if you don't hurry. Listen, Jen. If Doctor Day asks you what you think about this Huntington's disease testing thing, just say we talked about it. It's important that you tell Doctor Day that you agree with everything I said. I am doing this for your own good. Don't worry about it, OK?

Jen: Whatever, Mom.

Narrator: But, Jenny WAS worried—very worried. She hadn't realized that she might get Huntington's disease from her grandmother. She didn't understand why her Mom insisted that she be tested when her Dad refused to be tested. Caring for Grandma had taken so much of the family's time and energy. They hadn't taken the time to talk about how Grandma's disease would affect the rest of the family.

Part 1 *Family Secrets* - Record of Individual and Team Work

Name: _____

Class: _____

FACTS

What are the facts of the case?

Part 1 *Family Secrets* - Record of Individual and Team Work

Name: _____

Class: _____

Questions

What questions do you have, or think others might have, about the case?

Family Secrets Part 1: A Family Disease Quick Guide for Sample Lesson Sequence

Overview

PBL Part 1	Class #	Check Off	Time	Strategy / Activity Name
A Family Disease	Prior To Class 1			Introduction to PBL
				Team Roles
				Brainstorming Rules
				PBL Rubrics #1 and #2
	1			Assess Prior Knowledge
				Script Reading: Part 1
				Individual Facts & Questions (F & Q)
				Team Brainstorm (F & Q)
				Topical Barometer #1
				Homework: Reading on HD

You will need

For Each Student:

- 1 folder per student
- 1 copy per student of:
 - “*Family Secrets Part 1: A Family Disease*” script
 - Part 1 “*Part 1 Record of Individual and Team Work*”
 - “*How to Brainstorm*” handout, Part 1: Appendix B.
 - Information on Huntingtons Disease (for example, see this website for factsheets on HD: <http://www.hda.org.uk/hda/fact-sheets.php>)
- 1 Post-It note

Per Team:

- 1 set of team role cards per team (see Part 1: Appendix A)
- 4 large poster paper sheets per team
- 1 poster marker per team

Per Class:

- Four highlighted copies of Part 1 script for each reader: Narrator, Mother, Jenny, Jeremy
- 1 large set of Category posters/charts (see Part 1: Appendix D)
- 1 “Topical Barometer” per class (see Part 1: Appendix E)
- Optional “How to Brainstorm” poster per class

Prior to Class 1

It is strongly recommended that Class 1 of this *Family Secrets* PBL **not** be the first time that students have experienced the PBL strategy. Students should be introduced the major aspects of a PBL, such as Team Roles, Brainstorming, and working individually and in teams), prior to Class 1.

Also prior to Class 1, students should be introduced to the two rubrics that are designed for this PBL: #1-Problem Solving, and #2-Team Processing.

The explanations for the Team Roles and Brainstorming, and Rubrics #1 and #2, are found in the Appendices for Part 1.

Class 1

- Explain Family Secrets Problem-Based Learning activity and its purpose
- Students give examples of diseases that “run in families.” Teacher records on board/overhead
- Assign teams; have teams assign team roles
- Distribute folders containing *Part 1* reading, *How to Brainstorm*, *Record of Individual and Team Work*, and Post-It note to each student.
- Read Part 1 as a class—assign one student to read each character’s dialog
- Individual students write Facts and Questions on their *Record of Individual and Team Work*
- Teams brainstorm Facts and Questions from Part 1 script and record on large poster paper
- Students put their Post-It notes on one of 5 places on Topical Barometer #1
- Assign reading brief article on Huntington’s disease as homework (see above and Part 1 Coach’s Guide)

Students return team posters and individual sheets to folders.

Teachers keep folders as team group until next class.

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Part 1 – A Family Disease

Detailed Instructional Guide

Overview

Students are introduced to Jenny Lanahan, a teenager with a family history of Huntington’s disease (HD). Students read Part 1, identify the Facts from the scenario and list any Questions that they have about the scenario. These questions become the basis for later research on Huntington’s disease. The class completes Topical Barometer #1.

Objectives

After completing Part 1, students should provide evidence that they have:

- Identified Facts and Questions relevant to the PBL scenario
- Distinguished between genetic diseases (that “run in families) and other types of diseases
- Answered a preliminary question about genetic testing

Coach’s Preparation

Before beginning the *Family Secrets* PBL, it is suggested that students have completed at least one introductory PBL (see Problem Based Learning Folder) to introduce them to effective PBL group processes.

Before beginning Part 1 coaches should also:

- Review PBL coaching guidelines. See Problem Based Learning Folder in Introduction folder of CD.
- Prepare folders for each student. Students should put all of their work from the *Family Secrets* PBL into this folder. It is suggested that this folder should not be taken from the classroom.
- Make one copy of *Family Secrets* Part 1 (including forms for student work) for each student.
- Make one copy of *Team Roles* description cards (Appendix A – *Team Roles*) for each PBL team. Laminate if possible for use with other classes.
- Have ready a supply of flip chart or 11”x17” paper and markers for group work.
- Establish student PBL teams. See Appendix A - *Team Roles*. This may be done randomly, by student choice, or by teacher choice (to balance gender and ability levels).

- Review the guidelines for brainstorming. See Appendix B - *Guidelines for Brainstorming*. Either make copies of this for all students or make a poster/transparency that remains posted in the room through the entire PBL.
- Review Appendix C for information on the “Round Robin” strategy.
- Set up “Topical Barometer” and get small post-it notes. See Appendix D.
- Review Appendix D for information on the “Topical Barometer” strategy.
- Print a short article to give students as homework as a brief introduction to Huntington’s disease.

Sample Lesson Sequence: Part 1: A Family Disease - Class 1

Estimated Time (min.)	Summary of Steps	Suggested Strategies
Prior to Class 1		
	<p>Explain purpose of this PBL</p> <p>Form teams</p> <p>How to Brainstorm</p> <p>PBL Rubrics</p>	<ul style="list-style-type: none"> • Coach explains that students will be doing a multiple part PBL case about a family with a disease that “runs in the family.” • Coach explains that the purpose of this multiple part PBL is to show them the kinds of resources and support that are available to help families deal with the issues, questions, problems that arise when people are affected by medical conditions that “run in families.” • Coach assigns students to work in teams of 4 students. Coach assigns and explains roles for each member of the team (see Appendix A - <i>Team Roles</i>). • Coach reviews “How to Brainstorm” rules • Coach distributes PBL Rubrics #1 and #2, and gives students time to become familiar with categories and levels of performance • Coach explains that the rubrics will be given out early in the PBL, and then again at the end, so students and teams can track their progress in performing these individual and team PBL skills.

Class 1		
10	Connect to real world by assessing prior knowledge	<ul style="list-style-type: none"> • Coach explains that during class today students will read the first part of the family's story and then work individually and in teams to brainstorm lists of <u>Facts</u> and <u>Questions</u>. • Coach asks students to list causes for disease. Coach places these into categories: bacteria, viruses, fungus, environmental, or inherited ("run in family"). • Coach asks students to provide examples of diseases that "run in families." Some students will give examples from their own families. • Coach should anticipate that some diseases (like heart disease and cancer) which involve both genes and environment may be used as examples.
5	Read aloud PBL Part 1	<ul style="list-style-type: none"> • Coach distributes folders to each student. Coach distributes copies of <i>Family Secrets</i> - Part 1 (including Facts and Questions Sheets) to each student. • Students are asked to listen and highlight important <u>Facts</u> and <u>Questions</u> as Part 1 is read aloud. • Four students read aloud to class - Narrator, Jenny, Jeremy, and Mother.
5	Individual student work	<ul style="list-style-type: none"> • Students work individually to read and make a list of the <u>Facts</u> (What do you know?) and <u>Questions</u> (What would you like to know?) about Jenny's problem. These should be recorded on <i>Part 1 Family Secrets - Record of Individual and Team Work</i> forms.
15	Team work Brainstorming Questions	<ul style="list-style-type: none"> • Coach provides two large sheets of paper (chart or 11X17) and markers for each team. Label one <u>Facts</u> and the other <u>Questions</u>. • Coach explains the guidelines for brainstorming (see Appendix B - Brainstorming) • Coach asks students to take out their lists of <u>Facts</u> and <u>Questions</u> and draw a line under the last fact/question they have written. • Teams brainstorm to make a list of <u>Facts</u> - things that they know about Jenny's situation on the posters. • Teams brainstorm to make a list of <u>Questions</u> they have about Jenny's situation on the posters. • Individual students record the group lists of <u>Facts</u> and <u>Questions</u> on their own sheets. The recorder does not have to recopy the lists but should put the group poster in his/her folder. • Coach asks students to draw another line under the last team <u>Fact</u> and team <u>Question</u> they have recorded.

5	Topical Barometer	<ul style="list-style-type: none"> • Coach tells students to write their name, the date on one Post-It and the number of the response that best answers the question "If they were Jenny, would they have the gene test done?" 1- <i>definitely yes</i>, 2- <i>maybe yes</i>, 3- <i>don't know yet</i>, 4- <i>maybe no</i>, 5- <i>definitely no</i> • Students put up Post-It's on the "Topical Barometer" continuum.
	Homework	<ul style="list-style-type: none"> • Students should read a brief introductory article on Huntington's disease. For example http://www.hda.org.uk/download/fact-sheets/HD-Teenagers.pdf which was written specifically for teenagers.

Appendix A – Team Roles

- PBL teams of four students may be established randomly (by handing out cards), through student selection, or by teacher selection to balance gender and ability.
- Copy (possibly laminate) one set of team role description cards (Director, Recorder, Secretary, Spokesperson) for each team, cut into cards and distribute one set to each PBL team.
- Teacher should explain team roles and establish expectations for teamwork. No role should be considered superior to and other role. Students will be assessed for both their individual work and their ability to work effectively in groups.



What is your job as Director?

- Review the task and develop a plan for completing the task
- Make sure the team understands each part of the task
- Determine how much time the team has to complete each part of the task
- Politely remind the team how much time is left to complete each part of the task
- Help everyone get an equal chance to speak
- Maintain order in the group by encouraging team members to stay focused on the task
- Contribute to the team as an active learner
- Be constructive in helping team improve performance



What is your job as Recorder?

- Label each poster with appropriate headings and team members' names
- Record the ideas of team members exactly as stated. Do not change their wording into your wording.
- Contribute to the team as an active learner
- Be constructive in helping team improve performance

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Secretary

What is your job as **Secretary**?

- Record on 8 ½" x 11" paper the notes from team posters
- Maintain accurate notes on the team process
- Be certain your notes (or a copy of your notes) are in the team folder before you leave class
- Contribute to the team as an active learner
- Be constructive in helping team improve performance



Spokesperson

What is your job as **Spokesperson**?

- Listen carefully and be sure you understand what you will need to present
- Relay team's requests for clarification of directions to teacher
- Plan what you will say when you speak for the team when presenting
- Present information from your team to the class
- Contribute to the team as an active learner
- Be constructive in helping team improve performance

Appendix B - Guidelines for Brainstorming

How to Brainstorm



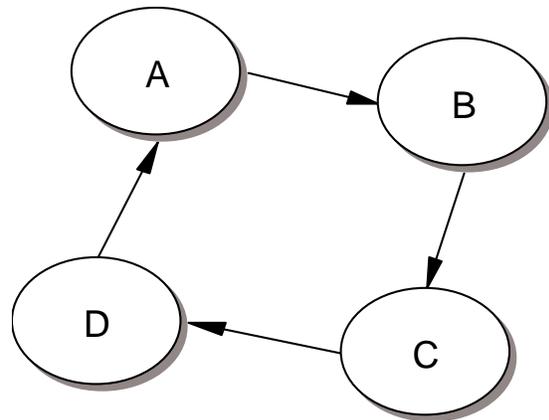
- Group members may call out ideas spontaneously, or the team leader may ask each member, in turn, for one of his/her ideas. Members may pass if they don't have an idea at that time.
- The recorder writes all ideas verbatim; no editing or summarizing without permission.
- Strive for quantity. Narrow down later.
- This is not a time for discussion. It is a time to generate ideas quickly. Discussion will follow brainstorming.
- Do not evaluate ideas out loud. For example, do not make comments like "That is a very good idea," or "That suggestion was just plain stupid." All ideas are potentially beneficial.
- Encourage a wide range of ideas, from obvious to subtle, to out-of-the-box, or off-the-wall. No idea is ridiculous.
- Ideas may be built on the ideas of others.
- Each idea presented belongs to the group, not the person who said it.
- Group processing goals should develop trust in each other and respect the ideas of others.

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Appendix C - Round Robin

A strategy used to elicit a range of ideas or viewpoints and build a sense of safe participation. Round Robin may be used during brainstorming or for reporting out to a group.

Round Robin



- Each PBL team has an opportunity to briefly contribute one fact, question, or opinion or passes.
- Other PBL teams listen carefully and record on their lists what other teams have said on their lists.
- PBL teams must be careful either to contribute a new fact, question, or opinion or to “pass” if they have nothing new to contribute.
- The process may continue until all teams have contributed or until there are no new ideas or viewpoints to add.

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Appendix D: Topical Barometer

A **Topical Barometer** is a teaching strategy that directs students to publicly demonstrate in their position on an issue, or choice of answers to a question, or some other form of information. In this strategy, a teacher poses the question on a particular topic, and then asks students to demonstrate their answer by placing an “x” or Post-It™ note along a large, visible continuum. Once the class results have all been posted, both students and teachers can observe the class results and students can make conclusions about what the class days “says.”

For a **Post-It™ Topical Barometer**, a teacher asks students to write their names on a Post-It™ note, and place the note along a continuum of options which best represents his/her point of view on an issue. Once students see where they stand with respect to one another, the teacher can divide students into groups representing different points of view to explain or defend their position. A variation of the Post-It™ model is to construct a histogram from the continuum to quickly quantify the number of students who place themselves in a particular position.

Teachers may want to save the results of the initial Topical Barometer until some other time in the instructional process, and then repeat the directions to stand in a location or to place a note on a continuum or histogram. The data obtained from this second (or post-instruction) Topical Barometer can then be compared with the initial (or pre-instruction) Topical Barometer in order to measure change. A teacher could then facilitate discussion about the pre- and post- changes.

Sample: Allow space above line for students to place Post-It notes.

Definitely Yes	Maybe Yes	Not Sure	Maybe No	Definitely No

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Appendix E – PBL Rubrics

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#1: PROBLEM SOLVING RUBRIC

Student:	1 Limited	2 Developing	3 Proficient	4 Advanced	5 Exemplary	Self	Team
Identifies Relevant Facts (“What do we know?”)	Cannot identify facts, or mixes facts with opinions.		Identifies most relevant facts.		Helps distinguish facts from opinions/inferences.		
Asks Relevant Questions (“What more do we want to know?”)	Asks no questions or ones unrelated to script.		Asks basic kinds of “who, what, where, when” questions.		Asks higher-level questions which reflect depth of thought.		
Organizes Questions for Research	Is unable to organize questions into categories.		Organizes questions into appropriate categories.		Identifies questions that fit into multiple categories.		
Selects Useful Information from Appropriate Sources	Cannot locate information to answer research questions.		Obtains relevant information from key sources provided.		Obtains reliable and wide-ranging information from sources beyond those provided.		
Organizes and Presents Information Effectively	Does not organize information to clearly present answers to research question(s).		Organizes information to clearly present answers to research question(s)		Summarizes information from many sources; presentation is concise accurate, and insightful.		
Identifies Major Problem(s) and Stakeholders	Cannot state a major problem or identify important stakeholders.		Identifies major problem and major stakeholders.		Distinguishes between major & minor problems; identifies direct & indirect stakeholders.		
Develops Multiple Solutions to Major Problem(s)	States only one (obvious) course of action to major problem.		Develops two or more solutions to the major problem(s)		Develops multiple solutions based on pros/cons and stakeholder perspectives.		
Chooses a Course of Action and Supports Choice	Cannot select or support a course of action.		Selects and supports a course of action based on ethics <u>or</u> risks/benefits to one stakeholder		Selects a solution based both ethics and risks/benefits to multiple stakeholders		

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#2: PBL TEAMWORK AND TEAM PROCESSING RUBRIC

Team Members:	1 Limited	2 Developing	3 Proficient	4 Advanced	5 Exemplary	Self	Team
Distribute Tasks	Do not distribute tasks equally.		Distribute tasks equally.		Distribute tasks based on team members' skills.		
Collaborate and Contribute Equitably	Let one or two team members do most of the work.		Ensure that all team members contribute fully.		Know and encourage each other's strengths to do quality work.		
Manage Conflict	Do not recognize or take action to reduce conflict.		Resolve conflicts to continue to stay "on task."		Identify and actively use "win-win" solutions to manage conflict.		
Use Brainstorm "Rules"	Do not use brainstorm "rules"; allow others to block the process.		Follow brainstorming "rules" and contribute ideas equally.		Develop new "rules" as needed to facilitate the brainstorming process.		
Effectively Reflect on Teamwork	Do not contribute to discussions about their work as a team.		Use the results of this rubric to suggest ways to improve teamwork.		Regularly monitor and assess teamwork of individuals and group as a whole.		
Build Consensus	Do not attempt consensus process.		Use consensus process to work effectively.		Seek out feedback and process this information to improve teamwork.		
Manage Time	Do not monitor their progress or recognize time constraints.		Use time efficiently and complete all tasks on time.		Regularly monitor and assess progress to exceed task expectations.		
Produce Quality Work	Show no, or limited, attention to making quality products.		Create high school products that meet expectations.		Create products that resemble practicing professionals "in the field."		
Stay on Task	Are easily distracted or frequently go "off task."		Use time in focused & productive ways.		Create work-plan agenda and monitor progress.		
Come Prepared	Are not consistently prepared with needed materials.		Are consistently prepared with needed materials.		Take time daily to assure that materials are ready for next work session.		
Maintain Positive Attitude	Exhibit negative behaviors; use "put down" expressions.		Exhibits positive attitudes/behaviors towards work and others.		Assist others in maintaining positive attitudes and behaviors.		

