

Engagement

**Inquiry
and
Investigation**

Definition

Resolution

Debriefing

PROBLEM-BASED LEARNING
IN THE SOCIAL SCIENCES

Black Death

NAGC Curriculum Award-Winner

Teacher Manual

Shelagh A. Gallagher

With contributions from William J. Stepien



Royal Fireworks Press
Unionville, New York

Problem Narrative: The Storyline for Black Death

Ideally, the direction of a Problem-Based Learning unit is decided through the questions students ask. To some extent, this is made manageable by the structure of the opening scenario presented during Problem Engagement. The opening scenario is carefully designed to point students in the direction of some predictable questions. For example, it would be hard to avoid asking questions about how the plague spreads or how people could avoid becoming infected. The narrative below and the lesson plans in this unit respond to these more predictable questions and address other desirable learning outcomes. They also provide a helpful guide for teachers new to PBL. Experienced PBL teachers are encouraged to use this unit as a framework, selecting lessons that fit the students' questions (and, as above, many should fit) and adding other lessons to address other questions.

Problem Engagement

The unit begins with an introduction to the medieval era. Students are provided with brief descriptions of different aspects of medieval life. Using this information, they create a model of a medieval town.

Content Students Should Encounter

- Medieval towns were crowded, wet, and unsanitary.
- Understanding of disease was crude compared to today; methods of healing depended on herbs and other natural remedies.
- Cities and towns were structured in a strict hierarchy. Manor lords and priests were at the top of the hierarchy, followed by freemen, who made up the merchant class. Peasants and serfs were at the bottom of the hierarchy. Most serfs were indentured servants, growing food and grain for the manor.
- The Church was a dominant influence on daily activities and wielded influence on beliefs about how and why people became ill.
- Towns had many communal resources, typically paid for by the manor lord, like a central bakery for baking bread.
- The unsanitary conditions in medieval towns left their inhabitants vulnerable to numerous threats.

In the midst of their work, students are assigned to a specific guild or role (this becomes important during the What Could Happen? lesson in Inquiry and Investigation). They also learn that they are all members of the town's Council of Elders; this is their primary stakeholder role for the problem.

The problem begins in earnest when a hysterical villager informs the students that a devastating disease is approaching the town. (If no one is available to play the role of hysterical villager, students receive a written Problem Scenario.) A meeting of the Council of Elders is called to discuss possible actions to take to protect the people of the town. At the meeting, a graphic description of the disease is provided by a traveling merchant, who has seen people infected with the pestilence. He describes the gruesome symptoms and the horrible, painful death brought about by the disease. Beyond that, the merchant describes how massive numbers of deaths change the survivors, who must contend with towns that have been stripped of meaning or substance.

The head of the Council then charges the members to come up with a plan that will help the town avoid the dire effects of the disease. This leads students to complete the Learning Issues Board. When the list of questions in the Learning Issues column seems complete, students select the five questions that need to be answered first; these become the basis for their initial research.

Content Students Should Encounter

- The plague is coming up the boot of Italy; it probably came to Italy from Africa.
- The disease seems to be moving from town to town via trade routes.
- People who get the plague suffer from gruesome, painful symptoms.
- The disease is highly contagious.
- Virtually everyone infected dies within five days.
- Thousands in large cities have died, including half the population of Florence, a prominent nearby city. Cities cease to function as people in all sorts of crucial roles die.
- People who do not fall victim to the disease are filled with fear, often turning on each other in an attempt to stay healthy.

Questions Students Should Ask

- How fast is the disease spreading?
- How does it travel from town to town?
- Which direction is it likely to come from?
- Is there a cure?
- How do people catch it?
- What are other towns doing?

Inquiry and Investigation

During Inquiry and Investigation, students seek the answers to the questions on the Learning Issues Board. Teachers who have enough time are encouraged to include at least one day of research during Inquiry and Investigation. The Resource Book for *Black Death* contains primary resource materials for research; books and websites are included in Appendix A. Structured activities included in this section help students gather, organize, and analyze the information they need.

- Students use a risk map to assess the level of risk they face, both of the likelihood of the disease coming to their town and of its impact on the town if it does arrive.
- Using a map of medieval Italy, students chart the path of the plague and estimate when the disease might arrive in Lucca.
- Students participate in a demonstration of how disease spreads and discuss the consequences of having a town lose members vital to government, business, education, religion, and family.
- The Comparing the Doctor and the Priest Venn diagram helps students compare information, determining where these two important perspectives agree and where they differ.

Content Students Should Encounter

- The plague travels primarily via three prominent trade routes.
- Travel time along the three trade routes varies according to mode of travel (sea or land), as well as distance.
- Religion and medicine have differing perspectives on the cause and cure of the disease.
- Some people take extreme measures to repent for their sins in an attempt to avoid infection.
- Medieval medicine emphasizes the use of herbs and other natural remedies.

- Medical interpretation incorporates some of the religious point of view. The Church limits some forms of medical research.
- The direct impact of the disease is physical illness; however, because the disease is highly contagious and frequently fatal, it also has indirect impacts on social structures.

Problem Definition

At this point, students have a sense of the rate the plague is spreading across the continent and within towns. They realize that medieval doctors do not know how the disease is contracted or how to cure it. However, they have not yet had a chance to put their information together and create a concrete problem definition.

Students use a circle map to think about both direct and indirect ramifications of the widespread death rate associated with the plague. At the end of the lesson, students are ready to identify the core issue at the heart of the problem and the constraints, either self-imposed or imposed from the outside, that will limit the range of solutions they consider, using the format:

How can we (issue) in a way that (constraints)?

After students create a definition of their problem, a messenger arrives with the *Ordinances of Sanitation in a Time of Mortality*, a set of regulations adopted by the Council of People in Pistoia to ward off the plague. Students are assigned different ordinances to interpret in preparation for discussion the next day. Students work through the medieval phrasing to interpret the meaning of each ordinance; they then assess the value of that ordinance for their town.

Content Students Should Encounter

- The plague could change every facet of life in a medieval town.
- Widespread death caused by the plague affects the economic, political, and social health of a town.
- Extreme situations, like plague, test the strength of personal values.
- Problems are solved in specific contexts; the context is created by time, place, and values.
- Problems are comprised of both issues and constraints.

Problem Resolution

Students weigh the merits of each part of the *Ordinances of Sanitation in a Time of Mortality* against the priorities they created for their problem definition, debating which of the ordinances they should accept, reject, or amend. The result of their discussion is a core set of recommendations for Lucca. To this core they add their own ideas, based on what they know about the problem and the common wisdom of the era. Finally, they present their recommendations to the Council of the People, the governmental body that can transform their recommendations into law.

Content Students Should Encounter

- Even in medieval times, towns came up with rules and plans to deal with epidemic situations.
- In the absence of a cure, solutions must focus on reducing vulnerability.
- Closing the doors of the town will be nearly impossible because of the need for communication, goods, and services.

Having done their work as members of the Council of Elders, the students are asked what they plan to do in order to protect their individual families.

Problem Debriefing

During Problem Debriefing, students have a chance to review their work and compare their thoughts and actions to the historical record describing what actually happened. Provide a quick mini-lesson about the plague, or show a video such as *Scourge of the Black Death*, produced by the History Channel, to see the devastation caused by the plague throughout Europe and the solutions attempted by people in many different towns and cities.

- **Social Studies.** The natural follow-up to this unit is to continue chronologically, discussing how the dramatic reduction in population was actually a catalyst to numerous developments in education, technology, and government. There is also a long history of epidemics that could be introduced as parallels to the Black Death, including recurring plague outbreaks in Europe, the Yellow Fever epidemics in the U.S., or the recent outbreak of cholera in Haiti.
- **Language Arts.** Numerous novelists have written about the plague era. A list of some of these novels are included in the Resources section of this manual (see Appendix A).
- **Science.** Students should be informed about the true cause and cure of the plague. Some may find it interesting to know that prairie dogs and black-footed ferrets are vulnerable to the plague and that several contemporary outbreaks have devastated populations of these animals in the Great Plains of the U.S.
- **Mathematics.** Exploration into probability that begins in the What Could Happen? lesson can be continued after the unit. Data gathered in class can be used for additional analysis, or students can use the Pandemic Applet provided by the National Council of Teachers of Mathematics at http://nctm.org/uploadedFiles/Lessons_and_Resources/Math_Here_and_Now/Pandemics/6_6v8.swf.

Problem Engagement




Welcome to the Middle Ages

Goals:

- Become familiar with aspects of daily life in the Middle Ages.
- Describe elements of culture in the context of medieval Italy.
- Engage imagination.

Grouping: Small groups for research; whole group to make town sketch

Generalization: Vulnerability increases the potential impact of risk. Features of the environment affect the likelihood of risk.

 Materials	 Problem Log	 Teacher Reference
<p>Included in Unit</p> <ul style="list-style-type: none"> • Welcome to the Middle Ages • Your Medieval Town sheets • How Are We Vulnerable? <p>Additional Materials</p> <ul style="list-style-type: none"> • Resources (Appendix A) • Resource Book • Video about medieval times focusing on village lifestyle • Materials to make medieval town bulletin board: construction paper, scissors, glue, markers, etc. • Medieval art to hang in the classroom • Medieval music 	<ul style="list-style-type: none"> • Welcome to the Middle Ages • Your Medieval Town sheets • How Are We Vulnerable? 	

Summary:

Students begin the process of “transforming” themselves into villagers in the year 1348 by creating a large sketch of a medieval town for the classroom.

Things to Do Before Class:

1. Gather the materials students will need to create a large sketch of a medieval town on a bulletin board, whiteboard, smartboard, or a large piece of butcher paper that can hang in the classroom. Set up a background for the medieval town (a few houses will do).

2. Add to the medieval feel of the classroom by hanging reprints of medieval art around the room (several good examples are provided in the Resource Book and are available to download) and by playing medieval music (which can be found through a simple internet search).
3. Gather together some of the resources from the Resource Book and Appendix A in a folder or a learning center in the room for students to use for research about their town.
4. Find and prepare a video that depicts life in the Middle Ages (one good resource is available at the Annenberg Learner website, *The Western Experience*, episode 21, “Common Life in the Middle Ages,” www.learner.org/resources/series58.html).

Things to Do During Class:

1. Explain to the students that for the next few days, they will be entering the world of a medieval town. Show them the background drawing of the medieval town, and tell them that they will be “living” in this town for the next few weeks. Briefly explain that you will be looking to them to take more responsibility for determining the appropriate directions for their learning as they discover information about what is going on in their town.
2. Discuss the importance of being able to understand the different dimensions of the town: how people lived, worked, worshipped, etc.
3. Divide students into groups with 4-5 students in each. Give each group a different category from the Your Medieval Town sheets to complete. If possible, show a brief segment of a video that depicts life in the Middle Ages. Have students take notes relevant to their group assignment.
4. Allow students to conduct further research into their segment of the town, if desired. Note: Enough information is included with this lesson to create a town sketch; however, resources are included in Appendix A for teachers who want students to conduct their own research.
5. When they are finished with their research, the students reconvene as a class to add their information to the background of the town on the bulletin board, whiteboard, smartboard, or butcher paper. Provide them with enough materials, such as construction paper or colored markers, to enable them to be creative and to add important details to their sketches.
6. Before class ends, direct students to the How Are We Vulnerable? page in their Problem Logs, and briefly discuss the concept of vulnerability. Assign the exercise as homework.

Notes: The students are unlikely to finish their sketches in one class period. Time is provided at the beginning of the next lesson for them to continue working on their medieval town sketches.

It would be easy to alter this activity from having students draw a two-dimensional town to having them build a three-dimensional town with cardboard, Legos, blocks, etc.

Welcome to the Middle Ages

The year is 1348, and you are living in Lucca, a city near the city-state of Florence. A dedicated member of your village, you have just been appointed to the Council of Elders. You were selected from a larger group called the Council of the People. You take great pride in this. While the hundreds of members of the Council of People *pass* laws, the smaller and more prestigious Council of Elders *writes* laws and makes suggestions when issues arise that need action. Being selected as a part of the Council of Elders means the people of your town have confidence in your ability to solve problems and settle disputes.

It's time for you to get to know your town! Each of the short readings on the next few pages describes something about life in 1348. Read the description you have been assigned, and follow the instructions to complete the assignment. There is space for your work on each page. When everyone is finished, the class will discuss the readings, and together we will create a picture of what it was like to live in a village in 1348.

Your Place in Your Medieval Town

You feel lucky to be a freeman in this village. Your father was a serf; he farmed for the manor lord most days and grew food for his family on a small corner of the land when he could. Being a serf was little more than slavery. You remember spending hours gathering acres and acres of wheat as a child and riding in your father's cart as he took the harvest to the manor lord. It was a hard living.

Your father wanted you to have a better life, so when you were old enough, he made you an apprentice to a local weaver. Instead of gathering wheat, you carded endless skeins of thread. But in the end, it was worth it because now you are a member of the Guild of Weavers. You own your own shop and live in the city instead of the country. You look forward to the occasional trips you make to Pistoia and Florence to sell your fabric.

You, your spouse, and your three children now live in a two-room house. This is a step up in the world compared to the hovel in the country, but sometimes you miss the open space of the countryside. And as much as you disliked the smell of the farms, you've discovered that the smell of waste and unbathed people in close quarters is just as rank.

You always try to buy food from the free serfs, since you understand that their life is hard. You still pay taxes to the manor lord to make sure you have the protection of his warriors, but that is better than spending your life doing his bidding. You look up at the manor house, with its imposing stone walls and gated courtyard. Life in there must be much different! You've never been to the manor, but your neighbor got to go inside once to make a delivery of pheasants for the lord's dinner. Your neighbor came back filled with stories of goblets made of glass, gold plates, and fireplaces in every room. You wonder how the stories could be true.

Your Place in Your Medieval Town Sketch Sheet

What is the layout of your town? What does it look like in the countryside, in town, and at the manor? Who are the people? What relationships do they have to one another? Draw a sketch of your medieval town. Include four important items from the reading that you think are necessary for your image to be accurate and realistic. Label each!

Life at Home in Your Medieval Town

Remember that the year is 1348; the place is Lucca. You have just finished dinner. Now you're scattering the remains of dinner on the rush mat on the floor. The dogs enjoy them, and you know that the rats that dig through the rushes will eat what the dogs don't. Soon it will be time to take the waste bucket out to the street—good to get that out of the house! Things get pretty smelly when five people live in two rooms. But you don't think it's unusual—most people you know live pretty much the same way.

Your youngest son is happily trying to chase a chicken outside, but your middle child has hurt his arm. He cut it playing outside. Your wife applied some herbs, but now there is pus coming out of the wound. Your son is lying on his bed, which is on a pallet in the same room where you, your spouse, and your two other children sleep. The doctor has just arrived. When you ask what the problem might be and what to do about it, he tells you that your son's blood is dirty. He recommends that you burn sage in the bedroom and that the child eat raw garlic. You hold your son steady as the doctor bleeds the wound to let the bad blood out. As he leaves, he suggests that the family pay an extra tithe, or tax, to the Church and say extra prayers so that no one else falls ill.

After the doctor leaves, you throw the child's bad blood out into the street with the rest of the waste. Then you light the grease lamp and call the children to evening prayers. When prayers are finished, your wife begins the porridge for the next day's breakfast, and you and your sons clean your tools so they are ready for another day of work.

Life at Home in Your Medieval Town Sketch Sheet

What does it look like at home in your medieval town? Draw what your house looks like, inside and out. What is around the house? Include four important items from the reading that you think are necessary for your image to be accurate and realistic. Label each!

The Church in Your Medieval Town

You pay taxes to the manor lord so that you receive his protection from outside invasion. However, both you and the manor lord owe fealty, or loyalty, to the Church. From the city of Avignon, Pope Clement VI announces rules that *everyone*—serfs, peasants, freemen, and even noblemen—must follow. You know that the church is affluent and important because it is the only stone building in town—aside from the manor, that is. But unlike the manor, the church is in the center of town.

You participate in more than 40 holy days that the Church observes each year. You also fast—sometimes three days a week. Of course, fasting is easier when food is short—who knows the difference? No meat on Wednesday, Friday, or Saturday, and none at all at Advent and Lent. Only the fine people living in the manor house can afford fish.

The Church also has something to say about why you get sick and what you should do about it. If you broke your arm, the local barber could set it, but if you became really sick, you would have to get help from both a physician and a priest. The priest would likely suggest that you were sick because God was angry at you. He would probably ask that you make an offering to the Church to appease God so that you would get better.

No wonder the Church can afford a stone building! In addition to paying taxes to the lord of the manor, you must pay a large yearly tithe, or tax, to the local priest. Your father had to spend time plowing fields to grow food for the priests, too. Sometimes if you need a special favor from the Church, you give an extra gift, either money or goods, to the priest.

The Church in Your Medieval Town Sketch Sheet

How important is the Church in your medieval town? Where is it located? How do priests and bishops interact with townspeople? Create a sketch showing the role of the Church in your medieval town. Include four important items from the reading that you think are necessary for your image to be accurate and realistic. Label each!

The Market in Your Medieval Town

In the marketplace, you peruse the available food. Your youngest son is waiting in line to pick up the family loaves of bread—and to pay the manor lord for providing the oven. You walk past the barrels of salted fish, where a half-dozen cats are camped out. You go past the baskets of eggs. Because it is still early spring, you don't even look for vegetables and fruit; they won't appear until the growing season is well under way. As you turn the corner, you see the butcher's stall. The meat looks fairly fresh, unlike last week. There aren't as many flies hovering around; this is a good sign. But the line is long and the supply is short, and you hope that there will be enough for you to buy some. Last week there wasn't.

Yesterday was a fasting day, so today you are looking forward to a good meal with meat! This is one of the biggest changes from your childhood as a serf, when you ate mostly barley—barley mush, barley soup, barley bread. Your parents even drank ale made from barley. No matter how it's prepared, it's hard to hide the taste of barley. Or the taste of pottage, a stew made of oatmeal with beans, onions, and vegetables like turnips. Now that you are better off, you can have meat once a week or maybe meat and chicken in the same week. But recently, food has been scarcer than it used to be, and prices are going up. A meal with meat is more of a luxury. As you stand and wait in line, you distractedly watch a couple of mice gnawing their way through the bags of grain at the next stall.

You hear a rumble and glance up. Rain. Again. Sometimes it seems like it will never stop raining. Oh well; there's nothing to do but stand and hope that there is still some meat left when you get to the head of the line.

The Market in Your Medieval Town Sketch Sheet

What does the market in your medieval town look like? Where is it located? What kinds of shops are there? How is food sold? Draw the market in your medieval town. Include four important items from the reading that you think are necessary for your image to be accurate and realistic. Label each!

How Are We Vulnerable?

Vulnerability means being unusually exposed to a particular kind of emotional or physical injury. Put another way, being vulnerable increases the risk that something bad will happen.

Example: *Poor eyesight makes people vulnerable to bumping into doors because they can't see. However, poor eyesight does not make people vulnerable to hearing loss.*

Sometimes vulnerability is necessary—like when you cross the street or when you ask a new classmate to play. Even in cases like these, it's a good idea to know how you're vulnerable and how to minimize possible harm.

*Directions: Think about the medieval town you started creating today as you fill in the blanks in the sentences below. Use information from the Your Medieval Town sheets to find aspects of medieval life that cause different types of vulnerability. Example: **Lack of food** makes us vulnerable to **starvation** because **people need food to live**.*

1. _____ makes us vulnerable to _____ because _____.

2. _____ makes us vulnerable to _____ because _____.

3. _____ makes us vulnerable to _____ because _____.

4. _____ makes us vulnerable to _____ because _____.

5. _____ makes us vulnerable to _____ because _____.