Lesson Plan Title: How Many Should Decide? Chess and Democracy

Concept / Topic To Teach: Learning the differences between a pure democracy and a representative democracy, and determining how to decide which to use in different circumstances. Ask students to answer the questions that the Founding Fathers were posed using math.

General Goal(s): Students will learn about the advantages and disadvantages of a pure democracy and a representative democracy through a chess game metaphor. They will also review some historical background of both, as well as apply Condorcet’s Jury Theorem to the benefit of an educated public in both types of democracies.

Specific Objectives:
- SWBAT define pure democracy and representative democracy.
- SWBAT analyze the advantages and disadvantages of both types of democracies.
- SWBAT explain Condorcet’s Jury Theorem.
- SWBAT apply the Jury Theorem to importance of having an educated public in a democracy.

Required Materials:
Chess board and pieces (this can be done with just one board, but is easier to manage if you have multiple boards, and divide the class into teams)
PowerPoint
Cards with Condorcet’s Jury Theorem

Anticipatory Set (Lead-In):

Divide the class into two teams (or more if you have a large class.) Sit teams next to a chess board and assign one team as the “pure team” and one team as the “representative team.”

Directions: The “pure team” is only allowed to make their moves after everyone votes on each individual move and the vote passes. The “representative team” must elect one representative prior to the game, and then only that representative is allowed to make the move during the game. Begin the game.

There is a good chance that you will be unable to finish the entire game in a short amount of time. This is okay, and can be used as a teaching moment later when discussing the efficiency of passing legislation and other government decisions.

Some students will most like become disengaged during the process, particularly on the “representative team.” As you are monitoring the game, ask students on both teams some of the following questions:
- Why are you not watching?
- Do you trust your representative to make the right move?
• Do you know the rules of chess?
• What would you do to know the rules of chess?
• Why are you not voting when your team is trying to make a decision?

Step-By-Step Procedures:
1. After the game, or after the time allotted - 15-20 minutes is probably sufficient - have students share some of their observations on the board.
   a. What worked?
   b. What didn’t work?
   c. Which team did you think was more successful?
   d. Why was it successful?
2. How might some of these observations related to the voting process in a democracy?
3. Show the PowerPoint slide on the definition and history of pure democracy.
   a. What are some characteristics of a society in which a pure democracy would be successful?
   b. What are the advantages?
   c. What are the disadvantages?
4. Show the PowerPoint slide on the definition and history of representative democracy.
   a. What are some characteristics of a society in which a pure democracy would be successful?
   b. What are the advantages?
   c. What are the disadvantages?
5. Put this into historical perspective. When the Founding Fathers were constructing the country they had to decide how many people would make decisions, i.e., how many justices should be on the Supreme Court? How many executives should be in charge? When should every citizen have a vote?
6. Introduce Condorcet’s Jury Theorem, which generally explains that if the probability that each voter will be correct is greater than 50%, then the more voters the better the decision. http://en.wikipedia.org/wiki/Condorcet%27s_jury_theorem
   a. How does this theory apply to chess? To government?
   b. How do you determine right and wrong in situations like abortion, government spending, etc? In those cases, is it about a right/wrong answer, or an educated/uneeducated answers?
   c. What are its limitations?
   d. Should we have more people on the Supreme Court? Should we vote on more legislation?

Closure (Reflect Anticipatory Set):

This lesson leads up to the beginning of the US government and the trial and error exercised during the First and Second Continental Congresses, the Articles of Confederation, and interpretations of the Constitution. Questions of who and how many should decide will continue to be come up throughout the course. It is important to know that as governments craft these organizational aspects, math can help answer these difficult issues.
Assessment Based On Objectives:

Students can tested in the form of an essay on the difference between a pure democracy and representative democracy or can be asked to decide and explain how many people should decide a certain issue.

Extensions (For Gifted Students/PIB):