Class Starters & Enders

Making the Most of Instructional Time
Five Minute Lessons

Class Starters and Enders help utilize the last minutes of class when a lesson ends but there is not enough time to start another, or for an interest approach at the beginning of class. Mini-lessons correlate to GPS in the programs areas below.

Let Freedom Ring

Program Areas: Metals Technology, Engineering and Technology, Government and Public Safety

Instructions: Read the material and make notes of important points, answer questions, and be ready to discuss this topic.

In 1751, William Penn suggested that a new bell be cast for the Pennsylvania Statehouse. It took three castings before the bell was strong enough to be struck repeatedly and yet the bell still suffered several cracks. The bell is characterized by one large crack that has put it out of commission. The Liberty Bell, as it was later called, was used to call the citizens of Pennsylvania together for the first reading of the Declaration of Independence, to announce the meeting of the First Continental Congress and after the Battle of Lexington and Concord. Today the Liberty Bell is a symbol of freedom for all Americans and is a frequented tourist attraction in Philadelphia.

The bell was originally cast by the Whitechapel Foundry in England in 1752. The bell weighed 2,000 lbs and after being struck once it cracked. It was to be returned back to England, but it was too heavy to take aboard. Instead two Philadelphia natives, Pass and Stow, undertook it's recasting. Even after recasting the bell a second time, the metal was too brittle to withstand repeated striking. Pass and Stow's third recasting is the bell that hangs in the State House Steeple today. The Liberty Bell was hid during the British occupation of Philadelphia in 1777. In 1835 the bell received its large crack while celebrating Washington's Birthday. The culprit was never identified and was probably due to improper operation.

The Liberty Bell is located in Philadelphia, Pennsylvania and is a prominent symbol of freedom associated with independence, freedom, and the Revolutionary War.

Good bell metal is very brittle; one inch thick metal can actually be broken in your hand by a sharp tap of a two pound hammer. The Liberty Bell is composed of 70 % copper, 25% tin, and 5% of combination of lead, zinc, iron, silver, antimony, arsenic, gold and nickel. The bell weighs 2,080 lbs. The largest primary crack is 1/2 inch wide and 25 inches long. The strike note of the bell is E-flat. Pass and Stow's names were cast on the bell along with scripture from Leviticus 24:10 and a misspelling of Pennsylvania (spelled Pensylvania).

History Connection

Students can research and create a timeline of events leading up to the signing of the Declaration of Independence including but not limited to battles of the Revolutionary War and The First and Second Continental Congress.

Review Questions

1. How many castings did it take before the bell was placed in the Pennsylvania Statehouse?
2. The Liberty Bell is an American symbol for what ideals?
3. Why are the words Pass and Stow cast on the bell?
4. What is the metal composition of the Liberty Bell?
5. What word is misspelled on the bell?
6. How did the bell receive its largest crack?

Science Connection

Students could examine the different metal components of the Liberty Bell and investigate their individual properties to predict why each metal would be used to create a bell.

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