

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.

Like a Ton of Bricks

Program Areas: Construction, Manufacturing

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

Straw, sticks, and bricks. While the three little pigs certainly knew their building material options, only one had the right idea.

The use of bricks as building materials dates back over 10,000 years, where bricks were known to be made in the **Mesopotamia** region of the Middle East. The first bricks made were fashioned from clay and dried in the sun. As technology improved over the span of centuries, brick **kilns** began to be used as a faster way of drying the clay bricks. Methods and speed of technological development varied greatly from region to region. Some bricks have holes to allow them to be both fired more evenly and to conserve material. The most common method of production involves shaping and pressing raw clay and then burned in a kiln at 900-1000 degrees Celsius. Once cooled, they are shipped off to where they are needed.

Bricks can be made from a variety of materials, including mud, **shale**, **slate**, **calcium silicate**, concrete, or **quarried** stone. Clay is still the most common material for general production. If you drive around neighborhoods, you'll probably see brick houses of many different colors – pink, white, yellow, dark red, browns, and grays, for example. The “ingredients,” so to speak, and the firing methods influence the brick's final color. The hotter the kiln is, the darker the brick will be. Regardless of their color, most **face brick** – the type used on houses – has a standard size of 8 x 4 x 2.25 inches in the United States. This size differs around the world.

The popularity and widespread use of bricks for structural purposes far outshone all other uses. Bricks were the primary choice of building material in most towns in Europe, even if stone was locally available. They were instrumental in allowing buildings to be erected quickly and safely during the Industrial Revolution, permitting factories and warehouses to be built rapidly. It was not until the early 19th century that they fell out of favor. Around this time, the practice of building upwards became preferable -- iron, steel, and concrete became more practical options.

Bricks have been used for other purposes, including paved roads and pedestrian walkways, lining furnaces, and in drainage systems. Even toys have gotten inspiration from this marvel – LEGO and other companies created plastic bricks for children of all ages to build with.

Review

1. From where are bricks thought to have originated?
2. Name three purposes bricks are commonly used for.
3. What are the majority of bricks made of?
4. When did bricks get replaced by other building materials?
5. Why was the use of bricks in construction so popular around the Industrial Revolution?



Depending on their material and the firing method used, bricks can be a variety of different colors.

History Connection

Research a famous structure made out of bricks. Write a one-page paper about the structure, its history, and what it is used for today.

Science Connection

Prepare a one-page paper on the different types of materials used to make bricks and the specific uses for each type.

Language Connection

Define the following terms.

Calcium Silicate	Kilns	Quarried Stone	Slate
Face Brick	Mesopotamia	Shale	

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