

## Shelter

A **shelter** is a place that provides refuge and protection from the elements. From the earliest cave dwellings to modern houses, shelter humans have designed has been influenced by geography, climate, and the natural building materials available.

Early humans first used caves for shelters, hanging animal pelts over the cave entrances to keep out the cold. Over time, depending on where they lived and what was available for building, humans made huts out of such materials as branches, animal bones, stones, woven plants and grasses, animal skins, and ice and snow.

Once humans began to grow crops in muddy river plains, people began to make mud bricks from which they could build

shelters. The mud was mixed with straw and dried in the sun to harden, and then shaped into bricks that were held in place with mud. With bricks and flat stones being used for buildings, people soon started using the first **mortar**, a mixture of crushed limestone, sand, and water that hardened when dry and could be used to hold stones and bricks together.

In the early 1800s, a building material made from a mixture of such materials as limestone, clay, water, sand and crushed gravel was invented. When dried, this material made an extremely hard, durable surface. Called **cement** (or concrete), this material revolutionized the building industry and is one of the most widely used materials in construction today. In 1885 the first steel-framed skyscraper, ten stories high, was built in Chicago. In many parts of

the world today, stone, steel, and wood are the major building materials.

However, many people today also continue to use other building materials such as straw bales, mud, woven grasses and branches, ice and snow, and even recycled vehicle tires.

Early villages were built in a circle, often surrounded by a wall and ditch. This gave the villagers a sense of protection and community. The Romans advanced the construction of cities with their engineering feats, including developing a system of pipes to carry water from one place to another. Such inventions made it possible for increasingly large numbers of people to live in one area.

Modern cities can contain millions of people living in apartments and houses. What these modern urban dwellings have in common is that they provide not only shelter, but also access to electricity, drinking water, and ways of heating, cooling, and disposing of waste.

### Did you know?

- People live in many kinds of shelters besides the houses and apartments that can be found in typical large cities. Examples: tents, huts, single-room dwellings, mobile homes, trailers, igloos, campers, straw bale houses.
- The first flushing toilet was invented in Crete about 795 BCE.
- In 1668, large sheets of plate glass began to be manufactured for the windows of grand buildings.
- People build shelters for animals as well as for themselves. Examples: barns, chicken coops, birdcages, and doghouses.
- Despite the fact that shelter is a common need of people, many people in the world do not have a home, mostly because of poverty and illness. Many of these people sleep outdoors or in shelters for the homeless. Even many modern cities in the world have areas of poverty.

## ACTIVITY 1

# Studying the Shelters People Built Over the Ages

### Purpose

To see that shelter is a common need of people, to learn that the shelter people use is related to their climate and culture, and to understand that shelter has changed with human progress.

### Material

Nomenclature material for shelter: Primitive, Egyptian, Greek or Roman, Medieval, Renaissance, and Modern (from History blackline masters).

Timeline of People.

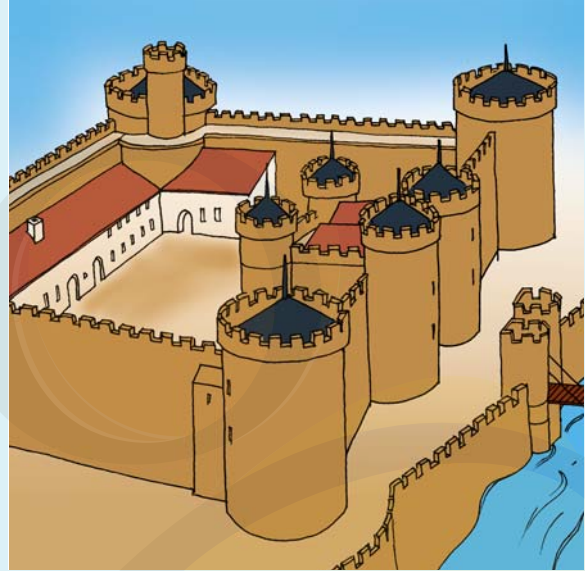
History Journals and pencils.

### Presentation

- Most Montessori teachers introduce this concept in Year 1 and present it in more detail in Years 2 and 3. This activity can be presented in three parts.

#### PART 1:

- Announce that today's study is about one of the common needs of people — the need for shelter. With the students, define and discuss what shelter is.
- Ask the students to describe the types of shelters they live in. How many family members share the shelter? What is it made of? Where did the building materials come from?



- Invite the students to describe other human shelters they have seen and what materials were used to build those shelters.
- With the students, discuss what might have been the very first kind of shelter that humans made (cave or hut), why a person in prehistoric times would need shelter (to keep dry and warm, and possibly to have protection from wild animals), then why people today need shelter (the very same reason, except that having shelter now often also involves having access to such things as electricity, drinking water, and waste disposal).
- Explain how humans have learned to make and use different materials for building shelters to suit a wide range of

climates and conditions. Define and discuss how mortar and cement revolutionized building.

- With the students, briefly compare what shelters early humans used and what many humans use today. Compile a list of five or more major skills humans have learned over time that affect the shelters they use. Examples: sawing; hammering; recycling; designing systems for water, heating, and cooling; building lumber mills, cement factories, and steel mills.

### **PART 2:**

- Present the nomenclature material as outlined at the beginning of this manual. You may wish to use only picture and label cards for Year 1, then add definition cards to the activity in Years 2 and 3, as appropriate.
- Once shelter nomenclature are matched, invite the students to place each set in chronological order, from primitive to modern.

### **PART 3:**

- With the students, lay out the Timeline of People.
- Point to the set of Primitive Shelter cards. Invite the students to place the set on the appropriate spot on the Timeline of People. Repeat with the remaining sets, so that each set is placed on an appropriate spot on the Timeline of People.

- Encourage the students to practice matching nomenclature material when the presentation is finished.
- Ask the students to do research on the steps involved in producing one type of shelter in one of the time periods, then use their journals to draw simple labeled pictures of the major steps involved. For example, how someone wealthy might build shelter in Medieval times could be illustrated by the following: (1) choose a spot on top of a hill so that approaching enemies can be seen, (2) design a castle, (3) obtain large quantities of stone and mortar, (4) find and organize workers to build the castle, (5) find people to help maintain the castle, such as cooks, cleaners, grooms, gardeners, and farm workers.

### **Extensions**

- Build a model hut, using materials from the classroom and from home.
- As an individual or in a group, build a model of a shelter from each of the six time periods.
- Using only materials found outside the classroom, such as mud, gravel, sand, water, stones, and dried grass, make a simple mortar and use it to stick several flat pieces of wood or stone together. Allow the structure to dry in the sun or in a warm place, then test how well the mortar works. First, lift up the structure to see whether the mortar holds the wood or stones together when dry. Next, allow

rain to fall on the structure or spray it with a hose to see whether the mortar holds the wood or stones together when wet. This experiment may take several days to complete.

- Act out a play showing what conditions might cause a primitive family to remain inside a cave (e.g., cold weather, wild animals) and what feelings and reactions the experience might invoke (e.g., fear, cold, smoky, hunger).

- Research two different kinds of shelters used in the world today and write a short description of how climate and economic conditions affects the design and materials used.

- As a class project, research traditional shelters of several different countries (e.g., Asia, South America, Africa, North America) and make a poster with pictures and descriptions.

