

animal substances. If hides were not tanned, they would become a mass of corruption, like the flesh of the animal when kept too long after death. Tanning also renders the skins pliable and impermeable to water.

After being tanned, some kinds of leather are subjected to a further process called *currying*. This consists of cutting away or shaving off roughnesses of surface, soaking in water and oil, and rubbing on a smooth board. In this way the leather is made more pliable, smooth, and soft.

(3) *Kinds and uses of Leather.*—There are several kinds of leather, each of which requires a somewhat different mode of manufacture.

The hides of oxen and bulls are made into a strong, coarse kind of leather, used for general purposes, as boots and shoes.

Deer-skins are made into *shamoy* leather.

Pig-skins are used for making saddles.

Calf-skins are used for making the upper leather of boots and shoes. They are also used, as well as sheep-skins and lamb-skins, for book-binding purposes.

Skins of kids and lambs are used for making gloves.

Thick straps and belts are made from the hides of the hippopotamus and walrus.

"Patent leather" is made from seal-skins.

Kangaroo hides are employed for making leather of a superfine kind; used to make dress boots for gentlemen.

Morocco leather, much valued as a material for book-binding, is made from goat-skins. Russia leather is also much for book-binding.

2. Name, in progressive order of teaching, the apparatus required for lessons in Geography, and show how you would give a conception of scale and proportion in map-drawing to young children.

A plan of the school and its immediate surroundings.

A figure representing the four cardinal points.

A plan of the village or town in which the school is situated, and its immediate vicinity.

A chart representing physical features, both pictorially and geographically.

A map of the county. A terrestrial globe. A map of the world.

A map of England and Wales, or the British Islands. A map of Europe.

A chart representing the chief facts in astronomy connected with the world as a planet. Maps of the Colonies, Asia, Africa, and America.

Draw a *small* picture of the front of a house. Then draw a larger picture of the same house, making the picture twice as high as before. Then draw another three times as high, and another four times as high. Let these be ranged side by side in order of size, the smallest to the left hand.

Show the children that we have four pictures of the *same house*. It may be represented by a small picture or by a large one. In other words, the picture may be on a *small scale* or on a *large scale*.

Now point out that in the larger pictures *each part* of the house is drawn larger than in the smaller ones. If we make the height of the whole house twice as great, then the height of each window, door, chimney, etc., must also be made twice as great.

The height of the real house is 20 feet, and the height of our smallest picture is 5 inches. Then we represent 20 feet by 5 inches, therefore we represent 4 feet by one inch, and our picture is drawn on a *scale of 4 feet to an inch*. If a real door of the house be 8 feet high and 4 feet broad, how long and how wide must it be made in our picture? [Two inches high and one inch wide.]

In the next picture the height of the house is represented by a line 10 inches long; that is, 10 inches represent 20 feet, and one inch represents 2 feet. Thus the scale is now 2 feet to an inch. How high and how broad must the door be made in the second picture? [Four inches high and two inches wide.]

A similar method may be adopted with the other two pictures.

3. What plan would you follow in giving a description of some battle? Illustrate