

Cardboard Work — No. 4.

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The correlation of the handwork with the ordinary work of the school must be kept steadily in view by the teacher, and the manifold opportunities for it taken advantage of. In most well-arranged drawing courses a place is given to scale drawing, largely on account of the mental training it affords. Several of the succeeding exercises offer good opportunities for concrete work in scale drawing, and its use and necessity can easily be shewn. In the lesson introducing it, the teacher may refer to maps, to a plan of the room drawn on the board, etc., as showing the necessity for making drawings of large objects to a smaller scale. The children will also readily see that in some instances, such as parts of insects in nature-work drawings, things have to be drawn on a larger scale than they really are, if we wish to represent them by a drawing. A few mental exercises will help to make the idea clear to the pupils. The door of the room may be drawn on the blackboard to a quarter scale, that is, one-fourth the real size. Give the children the actual size, or, better still, let a couple of them measure it, and let the rest tell the teacher the size it will be reduced to on the blackboard. "How wide?" "How high?" etc. Other familiar objects can be chosen and the practice in mental arithmetic made extremely helpful.

EXERCISE 16.—A cabinet photo frame. As the drawing of this is merely of two oblongs, one within the other, it forms a good exercise for a first attempt at scale drawing. Show the children the finished exercise and lead them to see that they can save a great deal of space by making drawings of the larger objects of the course, to scale. Next the scale must be decided on, say, one half full size. After writing at the top of the page the number and name of the exercise, the date, etc., the scale should be indicated thus—

Scale = $\frac{1}{2}$ size.

On no account should this be omitted from any scale drawings. Next, the actual size of the frame should be given and the children asked what size *they* will draw it. This is, as remarked above, an opportunity for mental arithmetic, and the questions may be varied. "How large would your drawings be if we made them

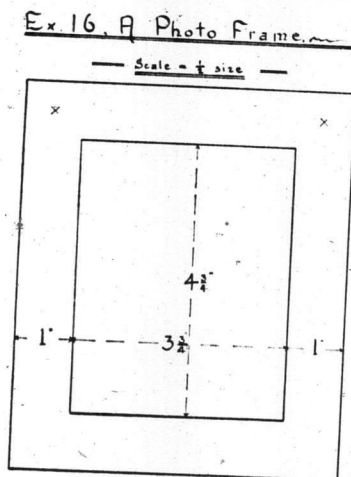
to quarter scale?" "How large will my blackboard drawing be if I make it four times the scale?" and so on. The outline being drawn, the width of the margin should be given, the dimensions of the opening calculated, (or *vice versa*) and the drawing completed.

Drawing to scale will necessitate the "dimensioning" of their drawings by the children, if it has not been already practised. The orthodox method of dimensioning is shown in the illustrations, but sometimes a faint line, broken in the middle for the figures, is drawn better by small children than the usual half inch "dash" (—) line as shown. The inches are indicated by two tiny strokes after the figure, as in the illustrations.

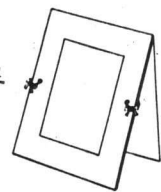
For the practical work of Exercise 16, two pieces of card are needed—a plain piece for the back and a piece of fancy or tinted board, very thin, for the front. The variety known as "Royal" Bristol is excellent for this and also for the stamp purse, Exercise 10.

The cutting out of the opening is quite a new operation and a little care and ingenuity are required in doing it. Commence by piercing a hole with the scissors about the centre of the oblong which is to be removed and then cut along the diagonals to each angle. After this has been done, it is much easier to cut along the lines to complete the opening neatly. It will also be found that much better results are obtained if the scissors are held *underneath* the card in cutting the opening. The teacher will, of course, have practised on one or two beforehand and the methods suggested above will be seen to be the best. Three edges of this front piece are then pasted for a quarter inch from the margin and pressed carefully in position on the card forming the back. The illustration shows the frame as an upright one, but it is a good plan to allow the children to choose individually whether they will hang it the other way. If so, the holes for the cord or ribbon will, of course, be punched on one long side instead of as shown. In either case three edges only must be pasted, the frame being left open on one *side* to allow of the photo being slipped in. The holes should be punched *after* the front is pasted to the back.

EXERCISE 17.—A small photo frame—to stand. The drawing of this model will involve the principles of development and scale drawing in combination. The teacher's model should be shown and commented on, then unfolded and laid out flat. It will then be seen that the three portions form one continuous strip, and the drawing may be commenced by making an oblong.



Ex 17. A Small Photo Frame



N.B. Pupils can draw development