

FOUNDATIONS, WALLS, FLOORS, ROOFS AND STAIRS



Lesson 5

Activity 1: Read the text about foundations and answer the questions.



FOUNDATIONS

The foundations, walls, floor, stairs and roof are some of the building elements that all types of buildings have in common.

Foundations are structures that transfer weights from walls and columns to the ground. There are two types of foundations: **shallow foundations** and **deep foundations**. Shallow foundations are usually embedded a metre into the soil, deep foundations are embedded more in depth.

There are different types of deep foundations and they can be made of timber, steel, reinforced concrete.

1. How deep are the shallow foundations into the soil?

2. How deep are the deep foundations into the soil?

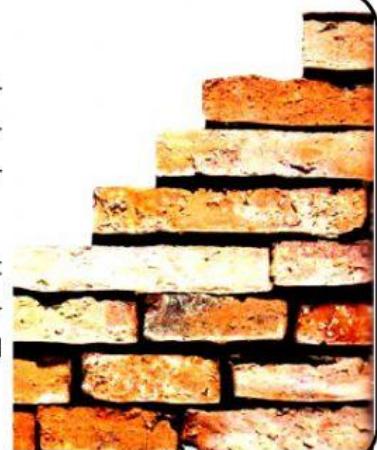
3. Name two materials of foundations.

Activity 2: Read the text about walls and answer the questions.

WALLS

Building walls support the superstructures of buildings (roofs and ceilings) separate space and give protection against intrusion and the weather. They usually have about three separate components: structural elements, insulation, finish elements or surface.

Usually conventional house walls have an inner wooden framework that may support part of the house, but does not support wall coverings, windows and doors. It contains electrical wiring, plumbing, insulations and other utilities.



1. What are walls for?

2. Do they contain insulations?

Actividad 4: Read and complete the text with the words in the box.

electrical wood surface covering underfloor strength

Floor structure contributes to the general (1) _____ of the building system. It is formed of a steel I-beam frame with a horizontal upper (2) _____ to which a number of adjacent composite floor panels is fastened firmly. Floors consist of a subfloor for support and a floor (3) _____ used to give a good walking surface. In modern buildings the subfloor often has (4) _____ wiring, plumbing, and may provide other services built in, like (5) _____ heating. There is a wide variety of floor covering materials: carpet, ceramic tiles, (6) _____ flooring, laminated wood or stone.

Activity 5: Read the text and decide if the statements are true or false.

Roofs can be divided in cut roofs, Where a carpenter measures, cuts and puts every length pf wood needed for the frame; and fixed roofs, made of pre-built and assembled trusses. Trusses are designed by computer so as to adapt to the typical weather conditions of the house. They are on the outside walls.

When the frame of the roof is ready, a waterproof membrane is placed over it and it is held in place by battens (long pieces of wood) that are nailed into the truss and are the supporting systems for the tiles. Tiles are then nailed to the wood. The top of the roof is finished off with ridge tiles that cover both sides of the roof's top row of tiles. Then, the end of the wood at the bottom of the roof is covered by a fascia. The fascia allows air to go safely through the membrane. To take away the water from the building, guttering is attached to the fascia. Insulation is also necessary.



1. Trusses are designed to adapt to the typical weather conditions of the house. _____
2. Battens are long pieces of word supporting the tiles. _____
3. The top of the roof is finished off with a waterproof membrane. _____
4. Then the end of the wood at the bottom of the roof is covered by the guttering. _____

Actividad 6: Read the text and say what the stairs in the picture are like. Use this vocabulary.

wide

circular

narrow

straight

spiral

steep

gradual

return

L - stairs

Stairs A: _____

Stairs B: _____

Stairs C: _____

Stairs D: _____

Staircases are powerful design elements and an opportunity for creative expression. They can be **spiral** (twisting around a centre pole with steps radiating out of it), **straight** (they stretch from lower to upper level in one straight run), **circular** (sweeping in a broad curve from one level to another) or they can have other shapes. They can be **wide** or **narrow**, **steep** or **gradual**, **return** (dividing the run, reversing direction 180 degrees at a landing) or **'L' stairs** (making a 90 degree turn at a landing).

Their design is influenced by their function and their style varies according to how their parts are built and combined. Staircases are built according to rules that are important for safety, indicating the heights of risers, depth and width of treads and placement of handrails.

The first measurement to take when building a staircase is the distance between the two finished floors. This determines the height of the staircase. Its riser must not exceed 22 cm in residential buildings. The average width is 80 cm, and anyway it should not be less than 60 cm.



Which type of stairs do you prefer? Why?
