

Choosing concrete

— tutor notes

What students will learn

When they have finished this module, students should be able to:

- Understand the different types and uses for cement and concrete
- Identify the materials that are used to make concrete

Things you need before you start:

Information

Find out:

- What cement, sand and rock are available in the area where these students live.
- Where does the cement come from? In what size bags?
- In what type and grades? What do they cost?
- Where does the sand and rock come from?
- Are there any restrictions on collecting sand and stones?
- What mix proportions are normally used in this area to cope with heat and conditions?

Materials

Get samples of locally available cement, sand and rock for students to study.

Tools or equipment

None

Course resources

Course video. Video player.

Introduction to this module

Talk about

Talk to the students about the main things they will learn and what they will do in this module:

- Where cement comes from and how it is produced
- The types of cement, sand and rock available
- How cement and concrete work
- The different types of concrete for a job.

Explain the rest of the course

When they have finished this module they will be ready to start on the rest of the course. There are three other modules that show students:

- How to prepare, lay and finish off a concrete path or slab
- An introduction to concrete blocks
- How to prepare and build a block wall.

Check that students have their workbooks. Explain the checklist that you will fill out with them.

Work through the module with the students

In addition — talk about:

Local uses of concrete and cement

Ask students for examples of what concrete and cement are used for where they live.

Give them some of your own examples of what concrete is used for, and ask them to suggest some others.

Your local names you use for things

Explain that the course will use the names given. Stress that it is OK for students to use their local names.

How cement powder is made

Explain to the students that a chemical change takes place at 3000 degrees F that gives cement its properties.

That is **very** hot! Most metals and glass will melt well below that temperature. This chemical change forms cement lumps that are ground into a fine powder – Cement.

Cement powder is so fine that it can easily pass through a sieve that's fine enough to hold water.

What goes into concrete

Tell students where they can get sand and stone/rock locally, what is used locally as an additive and the prices of local cement, sand and rock.

Also explain where they are NOT allowed to dig for sand or rock.

Different concrete mixes

Explain that the guide in the workbook for making concrete is a rough guide only. Emphasise the need to use the correct amount of cement — even in the trade-off for cost, workability and strength.

Tell students what mix you “normally” use with the local materials.

Show the video

It gives a background to cement making.

Activities

Show students examples of local mortar and concrete that has set and cured.

Check the students' activity work and give feedback on how they have done.

Work through the answers to the questions with the students.

Ask students to ask questions.