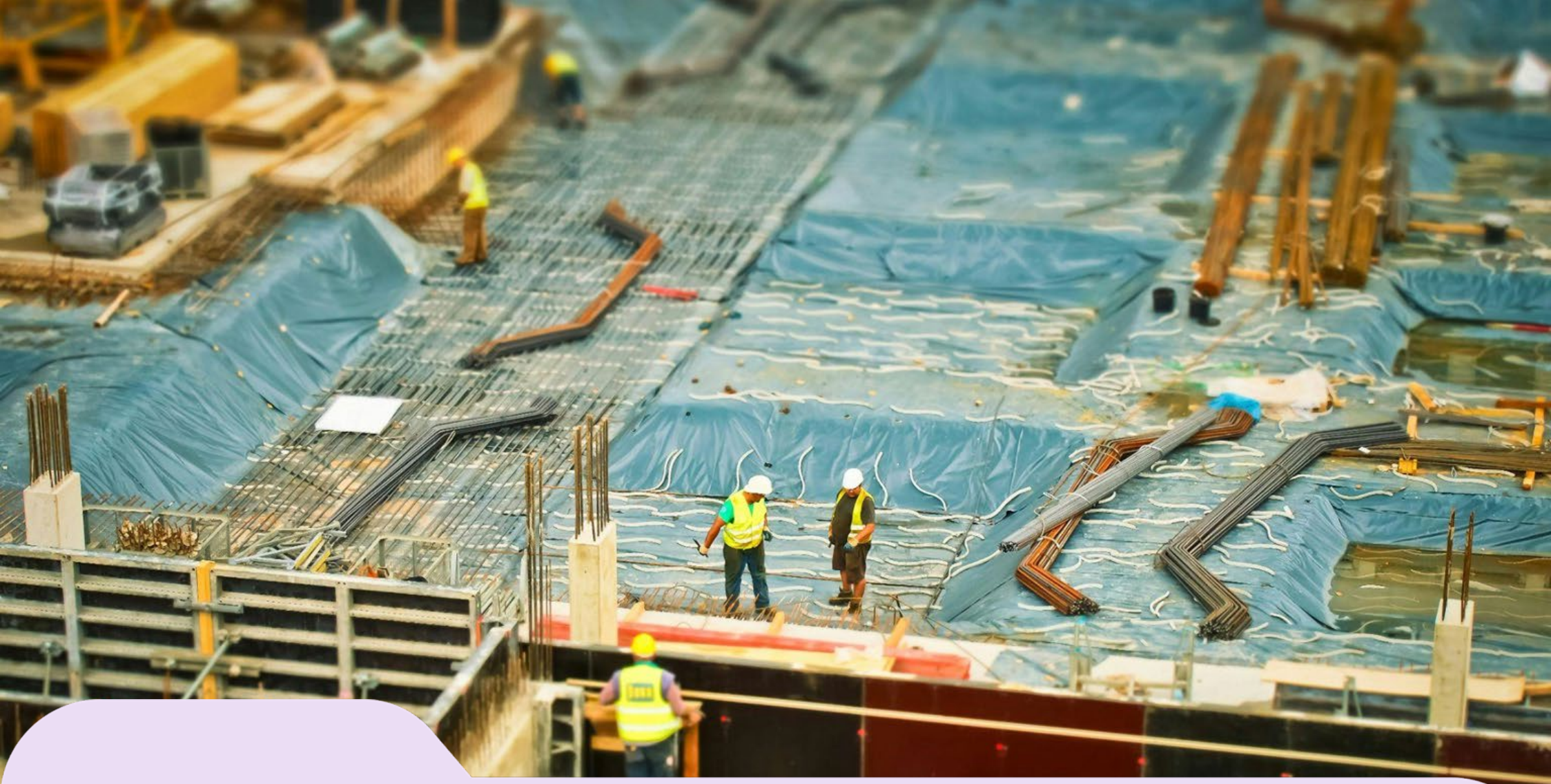

Construction T Level
Design, Surveying & Planning

Essential Skills Guide

Skills Builder PARTNERSHIP

Technical Education Networks

About this Guide

This guide has been produced by Skills Builder Partnership to support teachers with identifying and utilising opportunities within the T Level curriculum to develop and progress their students' essential skills. It can be used in a variety of ways including in curriculum planning, schemes of learning and/or lesson plans.

What are essential skills?

At Skills Builder, we define a skill as a repeatable action whereby the more you do it, the better you become. It's something that can be taught.

Essential skills are those highly transferable skills that everyone needs to do almost any job, which make specific knowledge and technical skills fully productive. They are therefore distinct from basic skills (literacy, numeracy and digital skills) and technical skills (specific to a particular sector or role, sometimes drawing off a particular body of knowledge).

Essential skills can unlock learning in the classroom, boosting academic outcomes, perseverance and self belief. They halve the likelihood of being out of work, and increase earnings across a lifetime. They even boost wellbeing and life satisfaction. You can read more on the research around essential skills on the Skills Builder website.

The Universal Framework

The Universal Framework: The Skills Builder Universal Framework is a tool for measuring and building essential skills. It breaks the 8 essential skills down into a sequence of steps, starting from absolute beginner through to mastery. It is supported by research and was developed with leading businesses, academics and educators. It consolidates an array of different skills frameworks into something comprehensive and practical.

The Universal Framework was Developed by the Essential Skills Taskforce: for more information see [Towards a Universal Framework for Essential Skills]

Construction (Design, Surveying & Planning) T Level Core Skills

Essential Skills Guide

Building your students' essential skills:

Students can complete an online self-assessment using the Skills Builder Benchmark tool to discover their initial skill score. Alternatively, you can use the Universal Framework as a useful tool to explore what progress in a particular skill might look like for your students.

- You may find that your students have different starting points and will develop their essential skills at different rates and through different experiences, such as industry placements and classroom activities. Students' progress through the skill steps may not be linear.
- You may wish to use some of the suggested activities in this guide to support your students in their learning journey and to build their essential skills as they progress through the T Level course.
- The activities suggested in this guide are not an exhaustive list and there will be other ways to develop these core skills.

In the T Level specification for **Construction (Design, Surveying & Planning)**, there are four core skills identified, with the main essential skills supporting development of these core skills below:

Core Skill A:
Communication

Core Skill B:
Work with others

Core Skill C:
Logical approach to problem solving

Core Skill D:
Primary research

Core Skill A: Communication

Why developing communication is important for students to progress in their future career:

- **Effective client collaboration**: Strong communication skills are essential for clearly understanding client requirements, conveying design concepts and plans, addressing concerns or changes, and ensuring overall client satisfaction throughout the project lifecycle.
- **Coordinating with project stakeholders:** Construction projects involve various stakeholders, such as architects, engineers, contractors, and government authorities. Effective communication supports coordination, information sharing, and conflict resolution among these parties.
- **Leading and managing teams**: Professionals in design, surveying, and planning often need to lead and manage teams of technicians, surveyors, and other personnel. Clear communication fosters team cohesion, ensures task clarity, and facilitates efficient project execution.
- **Presenting and pitching ideas:** Communication skills are crucial for presenting design concepts, surveying findings, and project plans to clients, stakeholders, and decision-makers. The ability to convey ideas clearly and persuasively can impact project approval and success.

Core Skill A: Communication

To develop communication skills, building essential skills in speaking, listening and teamwork are important.

Examples this may be evidenced through:

- participating in group and class discussions, question and answer sessions, examining concepts and approaches, to produce solutions for construction problems and communicating to a range of stakeholders;
- producing reports and presentations for construction professionals, clients, or for non-technical audiences, such as the public.

Build students' Speaking skills

Can students speak engagingly by using facts, visual aids and examples to support their points?

STEP 7
STEP 8

Example activities to develop this:

- Students **prepare** a presentation about a construction site. Students **suggest improvements** to the site layout, **using visuals aids and facts** from other sites to support their suggestions.

Can students speak adaptively by changing their language, tone and expression depending on the response of listeners?

STEP 10

Example activities to develop this:

- Students **role-play** different stakeholders (e.g., city planner, members of the public) and **present** their proposal for a new public infrastructure project (park, transportation, etc.) at a community town hall meeting. To challenge students, set questions for peers to ask.

Build students' Listening skills

Can students listen to others and record important information?

STEP 5

Example activities to develop this:

- Students **listen** to an employer project brief and **record** the key pieces of information. Students **compare** the information they recorded. **Discuss** in relation to the project.

Can students use open questions to deepen their understanding of what they heard?

STEP 7

Example activities to develop this:

- Students **categorise** a list of questions as open or closed.
- Students then listen to part of the delivery introducing a new topic area in the curriculum and **create a list of open questions** to improve their understanding further.

Build students' Teamwork skills

Can students work well with others by taking responsibility for their tasks?

STEP 3

Example activities to develop this:

- Students are each given one aspect of a construction project to **plan.** As a group, they must **combine** the different aspects to create an overall plan.

Can students contribute to group decision making?

STEP 6

Example activities to develop this:

- Students take part in a **collaborative** project to design a new building. Each student must **contribute** to the decision-making process. This could be done through a voting system to encourage participation.

For more ideas and resources to build your students' essential skills, check out the Universal Framework and the Speaking, Listening and Teamwork workshops.

Core Skill B: Working with others

Why developing the ability to work with others is important for students to progress in their future career:

- **Construction projects often involve multiple stakeholders and teams:** Construction projects can be complex and involve a range of different professional teams. One team's work may depend on the successful completion of another's. Communication and coordination in and between teams is vital to ensure that a project stays on time and to the required quality standards.
- **Working safely:** Construction sites can be hazardous environments, taking responsibility for your own safety and looking out for the safety of others is a priority. Working together to implement safety protocols and to identify risks is vital.
- **Finding solutions to challenges:** Unexpected challenges are common in construction work and being able to work as a team to solve these problems is key. Listening to others' ideas and sharing your own perspective in order to come up with the most effective solution is an important skill to develop.

Core Skill B: Working with others

To develop the skill of working with others, building essential skills in teamwork and aiming high are important.

Examples this may be evidenced through:

- working in pairs or small groups to conduct research on existing construction projects;
- working as part of a team to produce and assemble a tender for a project;
- working with stakeholders to determine project outcomes and required deliverables;
- working in groups to collect data during site visits, such as measurements and statistical information.

Build students' Teamwork skills

Can students work with others by supporting others if they can do so?

STEP 4

Example activities to develop this:

- **Create a group task** with clearly defined roles and tasks, ensuring that some tasks will take longer or are more complicated.
- Set a time limit for the group to complete the task. Once the time limit is over, ask students to **reflect** on how the task went and if those who completed their tasks supported others in their role.

Can students contribute to group decision making?

STEP 6

Example activities to develop this:

- In pairs, ask students to **create** a set of guidelines on how to make contributions to group decisions.
- Put students into larger groups and set a **discussion** topic such as "should the sustainability of a construction project be more important than the cost?".
- Each group must **come to an agreement** and **share** their answer with the class. Remind students to use the guidelines for group contributions and allow for students to **feedback** on the process of collaborative decision-making.

Build students' Aiming High skills

Can students set goals informed by an understanding of what is needed?

STEP 6

Example activities to develop this:

- **Create a role play** for students to take part in, for example: a client would like to construct a new play area in the local school. The project manager must define the parameters of the project based on the client's needs.
- **Discuss** what questions the project manager should ask to ensure that they understand the clients needs. Students should then **carry out the role play.**

Can students set goals, ordering and prioritising tasks to achieve them?

STEP 7

Example activities to develop this:

- Students are tasked with **finding** a location for a community construction project (e.g., a new school near a recently build housing estate).
- Students should **produce** a project timeline with prioritised SMART targets. The targets must be Specific, Measurable, Achievable, Realistic and Timed, and students should have considered the needs of all potential stakeholders.

For more ideas and resources to build your students' essential skills, check out the Universal Framework and the Teamwork and Aiming High workshops.

Core Skill B: Logical approach to problem solving

Why developing a logical approach to problem solving is important for students to progress in their future career:

- **Working safely:** Construction zones and machinery will have a series of rules and protocols that need to be followed to ensure that individuals can work safely. Ensuring that you can follow the instructions is vital to keeping yourself and your team members safe.
- **Unforeseen circumstances:** Even with careful planning, construction projects can encounter unexpected problems. Being able to come up with a range of creative solutions will be useful to keep these problems from derailing your project.
- **New technologies:** The construction industry is constantly evolving. There are new materials, techniques and technologies emerging regularly. Being able to adapt your planning to use these new technologies effectively and making sure you understand the impact they might have on the project as a whole, for example, budget, time and workforce will be an important skill to develop.

Core Skill C: Logical approach problem solving

To develop a logical approach to solving problems, building essential skills in problem solving and creativity are important.

Examples this may be evidenced through:

- following standard processes to produce unit rates, bills of quantities and other costing documentation;
- being able to interpret client visions and specifications to produce outline design proposals to meet client needs;
- producing planning documentation for existing construction projects.

Build students' Problem Solving skills

Can students complete tasks by following instructions?

STEP 0

Example activities to develop this:

- Students **create** a set of instructions for a particular task, before **swapping** their instructions with another group and **reflecting** on what makes instructions effective and how to follow them.

Can students explore problems by creating different possible solutions?

STEP 4

Example activities to develop this:

- Students **produce** multiple solutions for a construction problem such as "how to survey and test a large area of land and determine its suitability for building."
- Students should then **compare** their solutions with other groups.

Can students explore complex problems by building their understanding through research?

STEP 7

Example activities to develop this:

- Students **summarise** information from different types of research examples such as surveys, reports, government data, and/or interviews. Students should then **compare** their summaries.

Build students' Creativity skills

Can students generate ideas when they have been given a clear brief?

STEP 3

Example activities to develop this:

- Students **produce** success criteria based on a project brief and then **compare** the success criteria between groups.

Can students generate ideas to improve something?

STEP 4

Example activities to develop this:

- Students take an existing construction product and **produce** multiple designs to improve it. Students should then **evaluate** the designs against a set of success criteria.

Can students generate ideas by combining different concepts?

STEP 5

Example activities to develop this:

- Students **produce** a design for a product or project based on a set of success criteria. In pairs, students **combine** their different ideas into one new idea, ensuring that it still meets the success criteria.

Core Skill A: Primary research

Why developing primary research skills is important for students to progress in their future career:

- **Staying up-to-date with industry trends and best practices:** Practice in the construction industry is always changing. By conducting research professionals can stay informed about the latest materials, technologies, and regulations relevant to their project, enabling them to utilise innovative and efficient solutions.
- **Gathering accurate data for informed decision-making:** Effective research skills are crucial for collecting and analysing data related to site conditions, environmental factors, local zoning laws, and other relevant information necessary for making informed decisions during the design, surveying, and planning processes.
- **Understanding client needs and market demands:** Researching client requirements, market trends, and user behaviour can provide valuable insights to guide the design and planning of construction projects, ensuring they meet the intended purpose and needs of the target audience. .
- **Adhering to codes, standards, and regulations:** Construction projects must comply with various building codes, safety standards, and environmental regulations. Strong research skills enable professionals to identify and understand the applicable codes and regulations, ensuring that their designs and plans meet all necessary requirements.

Core Skill D: Primary research

To develop research skills, building essential skills in teamwork and problem solving are important.

Examples this may be evidenced through:

- working as part of a team to produce and assemble a tender for a project;
- using test instruments to verify values achieved theoretically for electrical circuits;
- collecting and interpreting statistical data and working with partners to collect dimensional information from a site visit to complete calculations of perimeters, areas and volumes.

Build students' Teamwork skills

Can students work with others by taking responsibility for completing tasks?

STEP 3

Example activities to develop this:

- Students are given different information about specific parts of a construction site.
- Students are tasked with **creating** an accurate diagram of the construction site by **working together** and using the information that each member has.

Can students contribute to group decision making?

STEP 6

Example activities to develop this:

- Place students in groups and ask them to **create** a planning document for a visit to a construction site. Place restrictions on the amount of time, length of visit, equipment and people that can visit the site.
- Students then **agree** on a plan to conduct the site visits, ensuring that they collect all the required information within the restrictions of the site set.

Build students' Problem Solving skills

Can students explore problems by creating different possible solutions?

STEP 5

Example activities to develop this:

- Set students a **research** problem such as "how can we determine how busy a road is?".
- In groups or pairs, students should **produce** multiple solutions / plans on how to answer the research question. Students should **share** their ideas in class and **discuss** the differences between solutions.

Can students explore complex problems by analysing cause and effects?

STEP 8

Example activities to develop this:

- Students **examine** a construction project plan and **discuss** how a set of proposed changes may affect the project.
- Students should then **discuss** if they think the changes would produce positive or negative effects, and the idea of intentional and unintentional cause-and-effect relationships.

For more information on building your student essential skills please visit the Skills Builder website at https://www.skillsbuilder.org/

For more resources and support for this T Level please visit https://www.technicaleducationnetworks.org.uk/construction/