



**URBAN SCIENCE.
ENGAGING SCIENCE,
CREATING SUSTAINABLE CITIES
COMPETENC-BASED ASSESSMENT**



Co-funded by the
Erasmus+ Programme
of the European Union

SELF ASSESSMENT TOOLS



urban science

1

**Developed in the project
Urban Science
Engaging science, creating sustainable cities
co-funded by the Erasmus+ Programme of the European Union.**



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Urban Science Self-Assessment Tools

BASIS

Self-assessment is a key aspect of successful assessment. In order to internalise new knowledge and competences, students need to reflect on their learning. Self-assessment practices are important features of assessment for learning as a strategy to promote 'learning to learn' (James et al., 2007). Self-assessment leads a student to a greater awareness and understanding of himself or herself as a learner.

Student self-assessment focuses on the student's personal development and on the importance of acquiring skills for tracking this development. In self-assessment progress is measured against the student's prior performances. This process helps students stay involved and motivated and encourages self-reflection and responsibility for their learning.

The ability to self-assess effectively develops over time and with experience (Cassidy, 2007). It is important that teachers consider how they might share feedback and assessment processes with students to facilitate student learning. Thus, teachers will be helping students to develop their own skills for self-assessment especially for sustainability competences that the Urban Science project is addressing. This can be done through discussions about their ability to assess which consecutively can be altogether useful in preparing students for life-long learning.

2

TOOLS

The Urban Science (US) project is proposing several tools to be used towards student self-evaluation. Teachers are free to choose one or more for inviting their students for a self-evaluation experience.

Four tools are suggested below:

1. Self-reflective generic questions after different module stages.
2. Likert scale.
3. Plenary pyramid.
4. Q-K-W-L cart.



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I. SELF-REFLECTIVE GENERIC QUESTIONS AFTER DIFFERENT MODULE STAGES

Note to teacher: Students are invited to complete the following sentences.

After Stage 1 – Initiating and eliciting

1. From today's lesson my **curiosity** was awakened by
2. What I **learnt** during the activities was
3. The **question/s** I have after today's lesson is/are ?

After Stage 2 – Defining and responding

4. What I mostly liked / disliked from **defining** our class's Urban Science idea was
5. From our activities' plan and future tasks I am mostly **excited** by
6. What I **learnt** during the activities was

After Stage 3 – Doing and making

7. My **engagement** in our class's enquiry included the following tasks:
8. The enquiry tasks were **meaningful** to me because
9. What I **learnt** during the enquiry activities was
10. My **answer/s** to the question/s from Stage 1 is/are
11. If so, my question/s from Stage 1 **changed** to

After Stage 4 – Communicating, presenting and evaluating

12. My most exciting / disappointing **moment** of our project was
13. My **message** to the world is

Note to teacher: Students are invited to share (should they want) their input with classmates and discuss, allowing for peer feedback to take place.

Note to teacher: Depending on the specific content of each module teachers are invited to add additional questions.





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II. LIKERT SCALE

Note to teacher: To be distributed to students pre- and post-Urban Science learning experience, not after each stage.



Levels (option 1): Not at all sure; Not sure; Neither sure nor not sure; I guess so; Sure, yes.

Levels (option 2): Definitely not; Not; Not sure; Yes; Definitely yes.

1. (Optional) Are you aware of the competencies* required for creating healthy cities and a low carbon future**?
2. Are you aware about the opportunities of science study towards your future career?
3. Are you considering studying science at a higher level?
4. Do you understand the issues related to cities sustainability and how they link to science?

*This question is allowing the teachers to introduce the concept of competences to students. A preliminary session may need to be arranged for students (depending on their age and understanding of competences).

**The teachers define low carbon (future).



III. PLENARY PYRAMID

Note to teacher: The pyramid is based on the eight sustainability competences from the Urban Science framework. Pyramid is to be used as a pre- and post-learning tool, not after each stage. A preliminary session may need to be arranged for students (depending on their age and their understanding of competences). Detailed description of the competences is available in the Urban Science framework.

Note to teacher: From the list of competences below the pyramid students are asked to reflect and to put an applicable competency into a suitable row.

Write one question you have about the competences

List two competences you feel need to be developed more

List three competences you feel confident using

1. The ability to understand systems and apply systems thinking (inputs, outputs, connections, loops, feedback).
2. An understanding of how natural systems function, ecological limits and resource constraints.
3. The ability to think in time - to forecast, to think ahead, and to plan.
4. The ability to think critically about value issues.
5. The ability to separate number, quantity, quality, and value.
6. The capacity to move from awareness to knowledge to action.
7. The capacity to develop an aesthetic and compassionate response to the environment.
8. The capacity to use these processes: knowing, inquiring, acting, judging, imagining, connecting, valuing, and choosing.



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IV. Q-K-W-L CART.

Note to teacher: Students use the chart to reflect on the content of what is being learnt and to address peers and / or the teachers with outstanding questions.

The question I have after today's class is: (at the end of the class)	What I know about that question? (as homework)	What I want to know about that question? (shared with peers/ teachers)	What have I learnt from that question? (after previous step)