



Guidelines for Adapting Urban Science for Home-based Learning

These notes are intended to guide teachers working remotely with students. They provide suggestions for which activities from the Urban Science modules can be adapted and how.

iChange – Carbon and Me

These activities provide an introduction to climate change which underpins Urban Science. They add to the stage 1 and possibly stage 2 part of the Urban Science cycle and can be used to replace/add to sections of other Urban Science modules. It will increase student knowledge and understanding of further topics and help to show the interrelatedness of them all.

Worksheets related to this module can be downloaded from www.urbanscience.eu/uk/learning-modules.

Introduction: Climate Change and Sustainability – clarifications and misconceptions

Data Race – this activity is usually quite competitive and run with teams of students in the classroom. The same activity can be set for individual students as an online task. Given more time, you might expect fuller answers from each student. You can still limit time allowed before results are posted into your chosen VLE (virtual learning environment).

Main 1 – Checking the Evidence

Ask students to post into your chosen VLE their predictions of what causes climate change before sending them to search the Bloomberg website to test their predictions and refine their ideas.

Main 2 – Climate Change People Search

More challenging to carry out remotely, but students can still ask family members and friends via online chats.

Plenary

There are lots of online tools for creating posters such as Canva and Piktochart.

In the Shade

Students investigate the characteristics of UV Light, and explore how their knowledge can be used to create a safer environment for humans.

Worksheets related to this module can be downloaded from www.urbanscience.eu/uk/learning-modules.

Stage 1 – finding out

Main 1 – Data Race: this activity is usually quite competitive and run with teams of students in the classroom. The same activity can be set for individual students as an online task. Given more time, you might expect fuller answers from each student. You can still limit time allowed before results are posted into your chosen VLE (virtual learning environment).

Main 2 – Future Forecasts...what if?: can be set a individual task for students and reported through your chosen VLE.

Plenary – The Messy Wall: there are lots of online tools for creating posters such as Canva and Piktochart. Use these (or similar) to ask students to create an initial poster of their ideas and questions; this can be updated throughout stages 2, 3 and 4.

Stage 2 – going deeper

Main 1 – Measuring UV Light: using UV beads is at the heart of this module. They are cheap and easy to buy online (for example [here](#) and [here](#)). Provide specific instructions for students to explore the effects on the UV beads in different light conditions: for example, in centre of a room, by a sunny window, outside in the shade, outside in full sun. Ask students to take a digital image of the beads before exposure and after 5/10/15 seconds. Ask them to post results into your chosen VLE providing explanations of what they observed.

Main 2 – For and Against (and in between): the focus for this activity can be changed to fit circumstances. The activity could be more usefully delivered to help review conclusions at the end of Stage 3.

Main 3 – Filter for Focus: a task which can be set as self-guided reading.

Stage 3 – investigating the effects of UV light

Main – UV research project: this is the key activity in the module. You will need to adapt the scenario as required, for example it could be based on the location of a children's play area in a local park or even a seat within the garden. The activity description provides examples of different tests students

can carry out; ask students to prepare and share a plan for their experiments prior to conducting them. You can ask them to define and justify how they will collect and record their data.

Plenary: the futures wheel or possible/probable/preferable futures sheets can be set as reflections.

Stage 4 – sharing the results

In the final stage students are asked to share their results and conclusions. Several options are provided and can be selected based on your chosen VLE and/or time available.

Grow Wild

Students investigate issues surrounding biodiversity and relate this to their school grounds by finding out information on the flora that exist there. They link their results to the function insects provide as pollinators of food crops and relate how we can support this vital ecological function.

Worksheets related to this module can be downloaded from www.urbanscience.eu/uk/learning-modules.

Stage 1 – initiating and eliciting

Introduction and Ask and Expert: the introduction videos are best delivered as self-study. Ask an Expert cannot easily be delivered through an VLE and can be substituted with a Data Race activity.

Plenary – The Messy Wall: there are lots of online tools for creating posters such as Canva and Piktochart. Use these (or similar) to ask students to create an initial poster of their ideas and questions; this can be updated throughout stages 2, 3 and 4.

Stage 2 – defining and responding

Main 1 – Defining Biodiversity Terms: this can be used as a reflection after the Stage 3 practical.

Main 2 – Socratic Questioning: these could be more usefully used to review student work at the end of Stage 3, helping them reflect on what can be improved in the future.

Stage 3 – doing and making

Main – School Grounds Survey: without access to school grounds, students need to locate two areas where there is a difference in abiotic factors (sunlight, temperature, wind, water, soil). Their task will be to assess if there is a difference in abundance of a single species or diversity of different species between the two areas. A key concern will be identifying plants in the sample area. A simple way around this issue is to name plants A, B, C, etc. This will not be satisfying to some students who will want to know names; the iNaturalist app is a good tool.

Plenary and Homework: extend these activities to encourage independent research on increasing urban biodiversity which can form the basis of sharing in Stage 4.

Stage 4 – sharing the results

In the final stage students are asked to share their results and conclusions. Several options are provided and can be selected based on your chosen VLE and/or time available.

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