

BIG IDEA URBAN NATURE DRAGONS' DEN

OBJECTIVE

Students appreciate the potential for nature to coexist alongside humans in urban environments. They understand the value of innovation, problem solving and creative design, informed by a good understanding of the specific needs of species. Students create their own blue-sky solutions to urban nature issues and are excited by the process and potential. They will research, discuss, argue and persuade.

OVERVIEW

There are many innovative solutions to create habitat for species in an urban environment, from green roofs and bat boxes, to supertrees and vertical gardens. There are also innovative solutions to deal with pollution in cities and to address the impacts of climate change. Technology and innovation can help us tackle urban nature issues and should be encouraged alongside behaviour change and traditional research, recording and conservation approaches.

There is great value in blue-sky thinking as a means of helping ideas evolve and emerge, ensuring they are not killed off in their infancy. This activity explores very real problems and issues facing urban nature, but does not offer fully realised solutions, instead letting the students concentrate on the best possible solutions and enjoy the process of introducing, designing, constructing and pitching ideas.

Further reading and information
thenatureofcities.com/www.naturevation.eu

TIME NEEDED

Minimum 2 hours, possibility to extend over several sessions, including homework

PARTICIPANTS

Groups of 3-5

RESOURCES NEEDED

- big Ideas sheets
- paper, pencils, craft materials

LEARNING OUTCOMES

- understand that nature can thrive in urban environments
- appreciate that towns and cities can be improved for people and wildlife
- feel motivated to evaluate human impacts in cities and consider possible solutions

INSTRUCTIONS

1. Explain that today the students need their creative thinking hats on, as they are going to be inventors, innovators and problem solvers, coming up with ways to help improve urban nature – their own Big Ideas. Introduce some examples of urban nature innovation and see if anyone has any suggestions. Examples include, supertrees in Singapore, green roofs, solar roofs, vertical farming and bat friendly lighting.
2. Introduce the idea of Dragons' Den. Explain that they will be creating their own idea and pitching it to the class. Pass out their Big Ideas sheets, which helps take them through the process.
3. Give each group of students their own specific urban nature issue to address (unless they have their own idea they would like to explore). Issues should be presented in envelopes, that contain details of the issue, as well as a specific challenge and some starter questions or pointers. These can be determined by the teacher, but there are possible challenges below, covering some of the key Urban Nature areas. Students might want to give themselves roles within their groups (for example, head of research, graphic designer, project manager, head of ideas).
4. The students' first task is fact-finding, research and information gathering, as they need to understand as much about the issue as possible before thinking about solutions. This could be homework.
5. Students share their research and fact-finding with the group and record what they have learnt in their Big Ideas sheet.
6. The next step is to brainstorm and explore possible solutions, this might be a physical solution, or a service or policy. The brainstorming can be as big and messy as you like. Students could use traditional mind maps, or draw or craft ideas. They should be encouraged to be creative. They might take ideas from new technologies, or even from nature (biomimicry). Students should not be overly concerned with the practicalities, but more on how their ideas will address their issue.
7. Students decide between them on their favourite idea and prepare their five-minute pitch. This can be supported by suggestions from their Big Ideas sheet. Their pitch should explain the issue and challenge they had, present their idea (through a drawing, demonstration, crafted prototype), and explain how it addresses the problem and the positive impact it would have on urban nature.
8. Groups take it in turn to pitch their ideas to the other students (this could be framed as the local council, investors, or another official body) who have the chance afterwards to give their verdict on the idea, as well as ask questions or make suggestions. Again, questions should not focus on the practicalities or logistic of their idea, but more on how it will solve the specific urban nature issue. The groups will have to practice their persuasion and debating skills.
9. The activity can finish with each student voting on their favourite idea (not their own).

CLASS DISCUSSION

Are smart cities, or simpler, greener cities the best way to protect and encourage urban nature?

BIG IDEAS SHEET

This should include -

Challenge:

Team and roles

Research

Ideas

Chosen outcome: how does your solution address the problem? What are the benefits for urban nature?

Pitch: how can you sell your idea to the class in less than one minute?

POSSIBLE EXTENSION IDEAS

Turning ideas into reality

Students could turn their ideas into reality, or at least create mock-ups of their ideas as craft projects. These could be demonstrated in the class as an Urban Nature innovation exhibition, along with their Big Ideas sheets.

Starting with recycled material

Another approach to the activity could be to have a pile of recycled materials and use this as the starting point for the students' ideas. This does suggest that their ideas will be physical items, however, rather than a service or policy. This might be what students gravitate towards, but it would be good to encourage thinking around innovative services and policies as well.

SUGGESTED CHALLENGES

Pollution

- **Light pollution**

Urban areas are often lit with artificial lights at night. This can confuse and negatively affect animals like songbirds, bats and moths. Your challenge is to come up with lighting ideas that keep our streets safe and illuminated, but don't cause harm to urban wildlife.

- **Litter**

When people don't dispose of rubbish properly it can harm wildlife and end up in waterways, and eventually the sea. Your challenge is to invent a brand-new way to remove litter from habitats or to stop it making its way into habitats in the first place.

- **Air pollution**

Air pollution comes from cars, aeroplanes, factories, wood burners, powerplants, farms and many other sources. Your challenge is to invent a brand-new way to reduce or stop air pollution from one or all of those sources, or to protect wildlife and humans in urban environments from the harm it causes.

Climate change

- **Adaptation**

Urban areas are often warmer than rural areas, this is called the urban heat island effect. It is caused by densely placed buildings and paved surfaces that absorb heat from the sun, and waste energy escaping buildings. A lack of vegetation can make the problem worse, as plants provide shade and cool the air through evapotranspiration. With climate change set to increase average temperatures, urban areas are likely to become even warmer. Your challenge is to invent a way to keep urban areas cool, and protect wildlife and humans from uncomfortable or dangerous heat.

- **Emissions**

Climate change is caused by greenhouse gasses in the atmosphere. Your challenge is to invent a new way to either reduce emissions from urban areas, or to remove greenhouse gasses from the atmosphere.

- **Habitats**

Many urban areas lack good habitats, and they are often fragmented and not joined up. Your challenge is to invent a new way of creating habitat in urban areas or joining up existing habitat, without interfering with people's day-to-day lives.

- **Killer cats**

Pet cats are a big issue in urban areas. They kill birds – and sometimes bats – and can have a big impact on their populations. Your challenge is to invent a new way of protecting birds and bats from pet cats.