

■ GOOD SCHOOLS GUIDE ■

CLIMATE EDUCATION

GREENING THE CURRICULUM

Today's forward-looking schools, in Hong Kong and around the world, are working to bring sustainability and climate change into their curricula, writes **John Cremer**



Most schools in Hong Kong don't yet have climate change or sustainability in the curriculum, but the topics' importance is widely recognised and being acted on around the world.

Key themes and workable solutions are woven into classes on science, civics, geography and languages. Student projects explore everything from green power and habitat destruction to clean water and coral regeneration. Volunteer groups are heading out to play their part in beach clean-ups, recycling initiatives and tree-planting campaigns. And campus buildings are being upgraded to incorporate solar panels, roof gardens and energy-efficient lighting.

All of that has an impact, but given the regular alarming news about rising global temperatures and threats to nature, moves are afoot to do even more, starting with instruction in the classroom.

"We are working to embed climate change education across the curriculum for all ages – not just in subjects commonly associated with this theme, such as geography or science," said Dr Karen Birmingham, head of communications, international education, at Cambridge University Press & Assessment (CUPA). "High-quality and local context are key to this programme, which is why we are seeking to build a community of global education experts and policymakers to provide input for this critical area."

The basic plan is to draw on the expertise of thought leaders in up to 160 countries and at roughly 10,000 schools around the world. Step two will be to develop comprehensive programmes that give young people the practical skills and holistic knowledge to mitigate and, ideally, reverse the harmful effects of climate change.

For maximum impact, the CUPA programme will aim to address challenges at the local, national and global level, while emphasising the need for urgency and the fact that everyone has a role to play.

"Education is an essential tool for combating climate change, but its potential is still far from being realised," said Rod Smith, group managing director for international education at CUPA. "A community of educators and leaders can influence the direction, and that will empower current and future generations to respond and be 'ready for the world'."

In the first instance, all those with experience or ideas to share are being invited to get involved. They can complete a questionnaire, take part in free online sessions to discuss relevant topics, or submit comments on a recently published paper setting out the main objectives.

At Hong Kong International School, course content is informed by the UN's Sustainable Development Goals. Photos: Handout

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Students at the Canadian International School of Hong Kong explore topics including life systems, energy, and habitats and communities

Taking the chance to have their say, some schools in Hong Kong – and not just those following the Cambridge Pathway curriculum – have plenty to contribute and, in many respects, are showing the way.

For example, at the Canadian International School of Hong Kong (CDNIS) – which follows the Ontario Ministry of Education syllabus and the International Baccalaureate (IB) – certain aspects have been customised in recent years to incorporate sustainability themes.

“We help students build conceptual understanding around elements of the natural world, the needs of living things, and human impacts on the environment,” said Alissa Krochenski, sustainability coordinator and environmental science teacher at CDNIS. “This is done by exploring topics such as habitat and communities, life systems and energy.”

The IB Diploma Programme (IBDP) offers an interdisciplinary course on environmental systems and societies (ESS), which covers the essential science, and what ongoing changes mean for cities and communities. The broad purpose is to show how human societies depend on the natural world, plus why and where human impact is so rapidly tilting the balance.

“The course combines scientific study with socio-economic perspectives, and promotes critical-thinking and problem-solving skills,” Krochenski said. “It is geared towards sustainable development and environmental stewardship, and we use case studies and human stories to help bring the data and evidence to life.”

An IB textbook provides material and outlines detailed learning objectives. However, CDNIS also makes liberal use of multiple sources of reference, including the Encyclopedia Britannica and other curated databases; well-vetted authorities like Scientific American and The New York Times; popular science channels on YouTube; and regularly updated teacher websites that are handy for developing new materials and activities.

“I also focus on current events and news articles, which give students exposure to topics that are relevant now,” Krochenski said. “That’s how I start every lesson because I want them to connect with the issues by discussing real-life situations, and to see how complex and interwoven things are.”



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CANADIAN INTERNATIONAL SCHOOL OF HONG KONG

As part of this, students are taught to use origin, purpose, value and limitation (OPVL) techniques to analyse the general reliability of sources. Like their teachers, they are expected to put forward sound evidence to support a presentation on, for example, the accelerating pace of climate change, what can be deduced from CO₂ levels in ice cores, or from weather data stretching back over hundreds of years.

To add variety, year seven students conclude a superunit on sustainability with a performance to act out what they have learned and how to “be the change”, assisted by an external theatre group. For this, they might do something about a small-scale solution for drawing CO₂ out of the air, or about a major geoengineering scheme. In their piece, they are expected to highlight what’s promised and any potential drawbacks, and to touch on both scientific and humanitarian aspects.

Allowing agency in other ways, all year 11 IBDP candidates are given two full days to design and complete an evidence-based investigation. Recent projects have focused on plastic pollution, littering, invasive species, and the installation of greywater systems to conserve resources.

In the ESS unit, too, there is an emphasis on applying knowledge. This could be by practising field sampling methods to collect data on snails, mangroves and crabs or, perhaps, by considering ways to improve aquatic food production methods.

“A lot is being done, but we should still be teaching more about climate change and sustainability, and in a wider array of subjects, considering what the scientific models suggest our world will look like in 50 to 100 years,” Krochenski said. “It is an interdisciplinary topic that can and should be woven into many subjects, so we are currently reviewing the curriculum from years one through 12 to fill in gaps and connect concepts from year to year.”

At Hong Kong International School (HKIS), similar thought is given to updating course content to ensure climate issues and the UN’s Sustainable Development Goals get the attention they deserve.

However, a programme of major investment in new facilities is also providing the opportunity to convert ideas into action as new buildings go up, and systems are installed to boost recycling, save energy, and minimise the school’s carbon footprint.

According to Raman Paravaikkarasu, director of facilities management at HKIS, the first phase involves the collection and analysis of data to establish current emissions and energy consumption, after which new benchmarks can be set.

One goal is to make current facilities more efficient, for example with better control of lighting and air conditioning systems in each room. Another is to use new energy sources, specifically solar panels, to cut costs and pollution.

“This process is both top-down and bottom-up,” Paravaikkarasu said. “It is important to infuse a greater understanding, so that everyone can contribute. Getting everyone involved and ensuring they are on the right track is all part of the school’s ethos.”