"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

- Our Common Future, Brundtland Report ,1987

17 Goals. 1 School. And Minecraft.

Portfolio of work based on a youth-led sustainable development design project

...What are the Sustainable Development Goals?

...How did we implement sustainable development in our school?

...What are the links between the SDG's and Green-Schools Themes?

...Improving the Learning Environment as part of designing an SDG-friendly School

What are the Sustainable Development Goals?
The Sustainable Development Goals are 17 global goals that were agreed by the UN in 2015, and range from creating decent work and economic growth to implementing a more equal education for everyone. They are about thinking ahead in years to come (by 2030, to be exact) in order to create a safe and better future for everyone on the planet. By implementing them into schools now, we can change the futures for students.

They aim to end inequalities, protect the planet and ensure that the future is prosperous for all.

The 5 key elements that led to the development of the Sustainable Development Goals (SDGs) are known as the 5 Ps.

People   **P**lanet   **P**rosperity   **P**eace   **P**artnership

What are the 5 P's?

<u>People</u>
We are determined to end poverty and hunger, in all their forms and dimensions, and to ensure that all human beings can fulfil their potential in dignity and equality and in a healthy environment.

<u>Planet</u>
We are determined to protect the planet from degradation, including through sustainable consumption and production, sustainably managing its natural resources and taking urgent action on climate change, so that it can support the needs of the present and future generations.

<u>Prosperity</u>
We are determined to ensure that all human beings can enjoy prosperous and fulfilling lives and that economic, social and technological progress occurs in harmony with nature.

<u>Peace</u>
We are determined to foster peaceful, just and inclusive societies which are free from fear and violence. There can be no sustainable development without peace and no peace without sustainable development.

<u>Partnership</u>
We are determined to mobilize the means required to implement this Agenda through a revitalised Global Partnership for Sustainable Development, based on a spirit of strengthened global solidarity, focussed in particular on the needs of the poorest and most vulnerable and with the participation of all countries, all stakeholders and all people.

What are the links between the SDGs and Green-Schools Themes?

The economic, social and environmental dimensions of the SDGs seek to address poverty, hunger, disease, fear and violence, education, healthcare, social protection, sanitation, safety, sustainable habitats and energy.

Green-Schools themes seek to address these issues through school-relevant initiatives. The underlying principles of 'sustainability' and 'responsibility' reflect and add value to one another.

How did we implement sustainable development in our school?

To implement sustainable development in our school, we recreated our school in a virtual world and then improved and expand it to align with the SDGs. All of this was accomplished using the online game Minecraft.

Following a review of all 169 targets contained across the 17 SDGs, our team of 10 researchers compiled a list of over 100 recommended changes to implement in the school. A team of 27 'builders' worked over the course of a week during Pres Week in November 2017 to develop their own ideas and constructions to the suggested changes into the virtual school world.

Once the full suite of changes were constructed the research team reviewed the 'builds', suggested any necessary adjustments and started developing a research portfolio of the work to document the main changes on the project, which forms the basis of this document.

Minecraft: Minecraft is a game where you dig (mine) and build (craft) different kinds of 3D blocks within a large world of varying terrains and habitats.

Builder: using Minecraft, constructed the school and its surroundings in its original state to scale. Suggested changes to the school and rebuilt in Minecraft World based on the research brief.

Researcher: researched the SDGs and developed a 'Brief' outlining proposed changes to the virtual school. Supervised and monitored *Builder* changes. Compiled a report on the changes.

Improving the Learning Environment as part of designing an SDG-friendly School

In thinking about improving the quality of education in our school we redesigned our classroom spaces and opened up learning environments to allow for more movement and different types of learning experiences.

We developed a shared quiet space where students could work autonomously or in cooperative project work. This would become a facility available to the wider community for the purposes of study and learning.

We also considered our connections to the wider world, and in particular our impact on and connection to developing countries.

6 questions raised by the project

1. What are the **implications** for us in our school for realising the SDGs?

2. What are the **various footprints** we produce in connecting with the world, as a school, and what can we do about them?

3. What is the **impact on learning** as a result of the changes to our school community?

4. What might be **realistic** or achievable, based on what we can, should or might do in the school community?

5. What might be some of the main **barriers** to achieving these kinds of changes? How can they be overcome?

6. From the list of 100 ideas and suggestions of changes we can make, **what should we prioritise**?

Goal 1: No Poverty

End poverty in all its forms everywhere

- We implemented many forms of **support and social protection** to the school to reduce poverty, such as the creation of a **breakfast club** in the school's canteen and set up a **book rental scheme** in the new and improved library
- Parts of the school uniform were subsidised, and a **second hand uniform project** was initiated in the school where students can donate clothes for other students to purchase
- **WiFi access points** were dotted around the premises in order to break down barriers that prevent students from accessing opportunities, self-directed learning and to keep up with what's going on in the world, and amenities such as showers were made available to students before school and at other times
- Hands-on student-led **workshops on the causes of and obstacles in addressing poverty, locally and globally**, and our roles in relation to these, for example, as part of connecting with schools in developing countries across the Edmund Rice schools network.

All of these contributions were related to the goal of ending poverty, as they all benefited the less fortunate students who cannot afford such things as a healthy breakfast, a school uniform or school books. This is how we dealt with these issues to create a fairer Presentation College where anyone, no matter their wealth, can succeed.
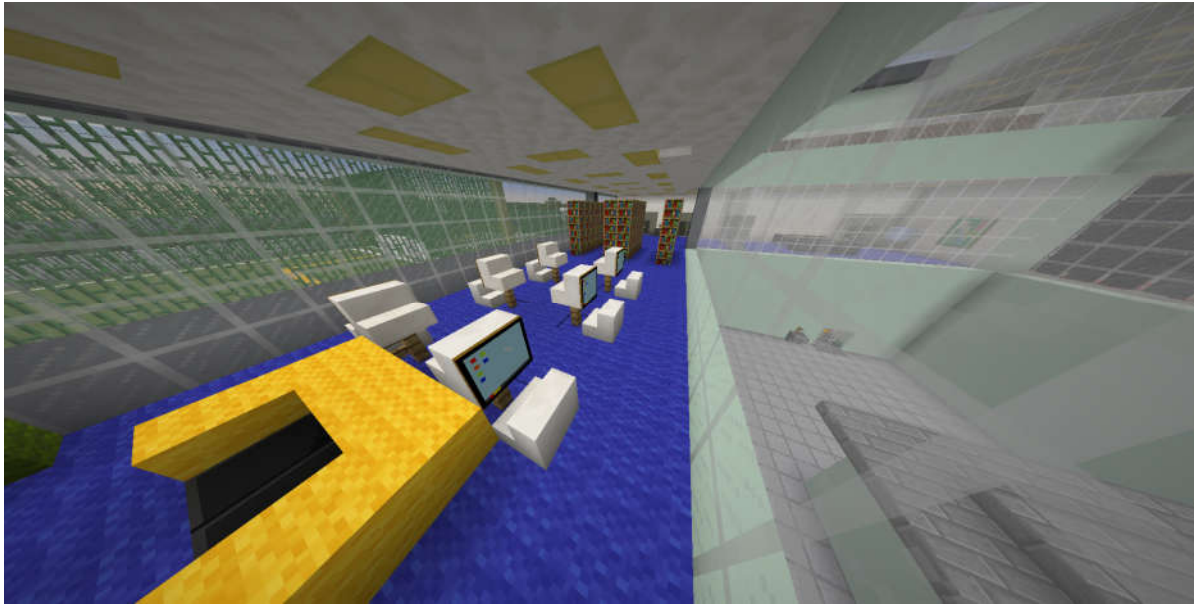
Goal 2: No Hunger

End hunger, achieve food security and improved nutrition and promote sustainable agriculture

Green-Schools link: School Grounds

- We built **greenhouses and chicken coops** as well as other school farms as our main aim was to create a sustainable, homegrown, organic source of food, all grown on school grounds
- These crops are to be used in the school canteen, in order to make the **canteen food offered more nutritious and healthy**. This lowers the cost of producing canteen food, which in turn reduces the cost of the meals and encourages a **healthy diet**, regardless students' economic situation
- Ensured foods and agricultural goods bought for the canteen and for school events are **sourced from sustainable food production systems** in Ireland and abroad, particularly from developing countries, and that help maintain ecosystems that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality.

Goal 3: Good Health and Well-Being

Ensure healthy lives and promote well-being for all at all ages

For Goal 3, the key idea behind the changes we made related to mental and physical health. We believe physical health has received a lot of support to date and some strong policies exist in relation to this. As a result, we prioritised mental health in our school instead as we feel this area needs updating.

- We built **well-being rooms** for students to use as spaces to destress and unwind

- **Workshops and lectures** on the effects of drug and alcohol abuse in order to educate students on the risks involved
- We implemented **health awareness/monitoring** for students to take responsibility for their own well-being and also made new **cycle lanes** to allow students to cycle to school with minimal risk
- We ensured all staff and students have **access to universal health care** and essential quality health-care services, medicines and vaccines.
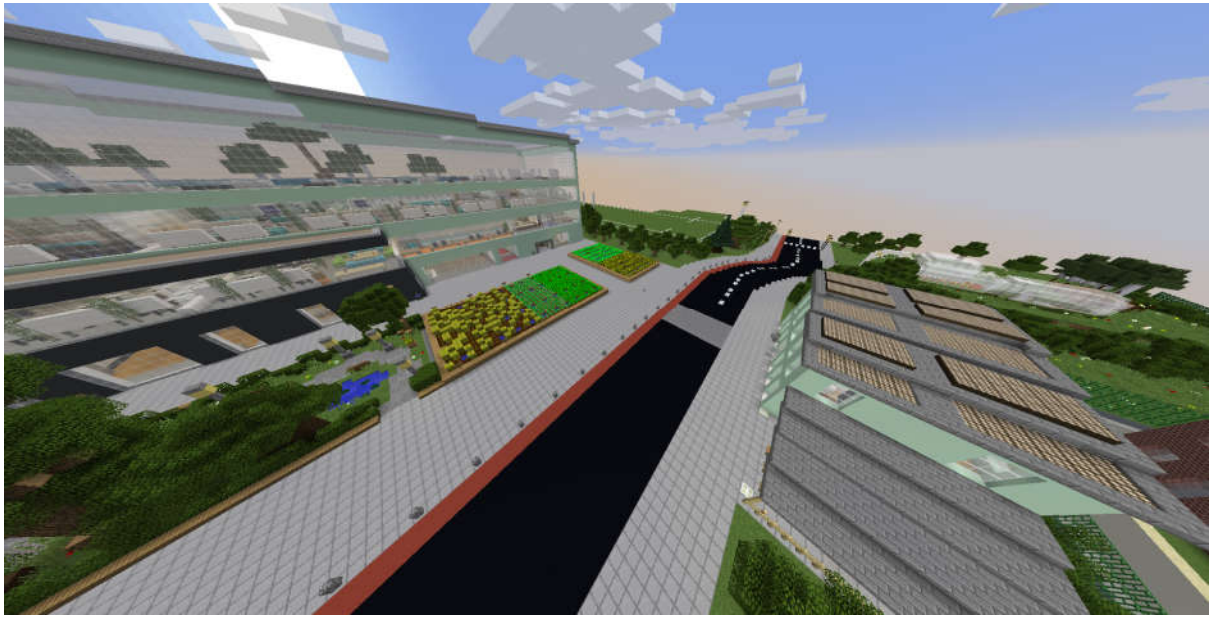
Goal 4: Quality Education

Ensure inclusive and quality education for all and promote lifelong learning

For Goal 4 we focused on improving the quality of the education available in this school and improved the facilities available to all students in the school

- **Mobility** was in the forefront of our minds when deciding on the improvements to the school. **Wheelchair ramps** were added around various parts of the school and a path was built around the rugby pitches to allow greater access to people with mobility problems
- **Sliding doors and emergency exit ramps** were constructed to give wheelchair users more accessibility
- We **built and upgraded school facilities** that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all
- We **built libraries and common rooms** for student use, providing people with areas to study and research in a comfortable environment.
- We **promoted regular student-led opportunities such as poster campaigns and school-wide initiatives to promote sustainable development**, including, among others, through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship and appreciation of cultural diversity and of culture's contribution to sustainable development.

Taken together, these improvements support ongoing initiatives to ensure access to quality education for all students.

Goal 5: Gender Equality

Achieve gender equality and empower all women and girls

- In Goal 5 we wanted to move away from an all-boys school and instead **embrace a co-educational, equal opportunity place of learning**
- We built separate bathrooms for females in the premises, created **information seminars** on violence against women and girls, and males, and set up a **childcare class** for students
- We made sure to not only promote gender equality among students, but **gender equality among staff**. One idea we implemented was to **share spaces**, for example, classrooms, with other all-girl schools, which promotes **partnership and empowerment** of students across schools
- Another approach is to have **specific classes for household and life skills**, as both **men and women should have the same education** and should not be taught separate things based on gender alone.

By doing all of these projects and putting them in the virtual school, we hope to create a more equal, inclusive Pres Bray, one where everyone can get access to quality education, no matter their gender.
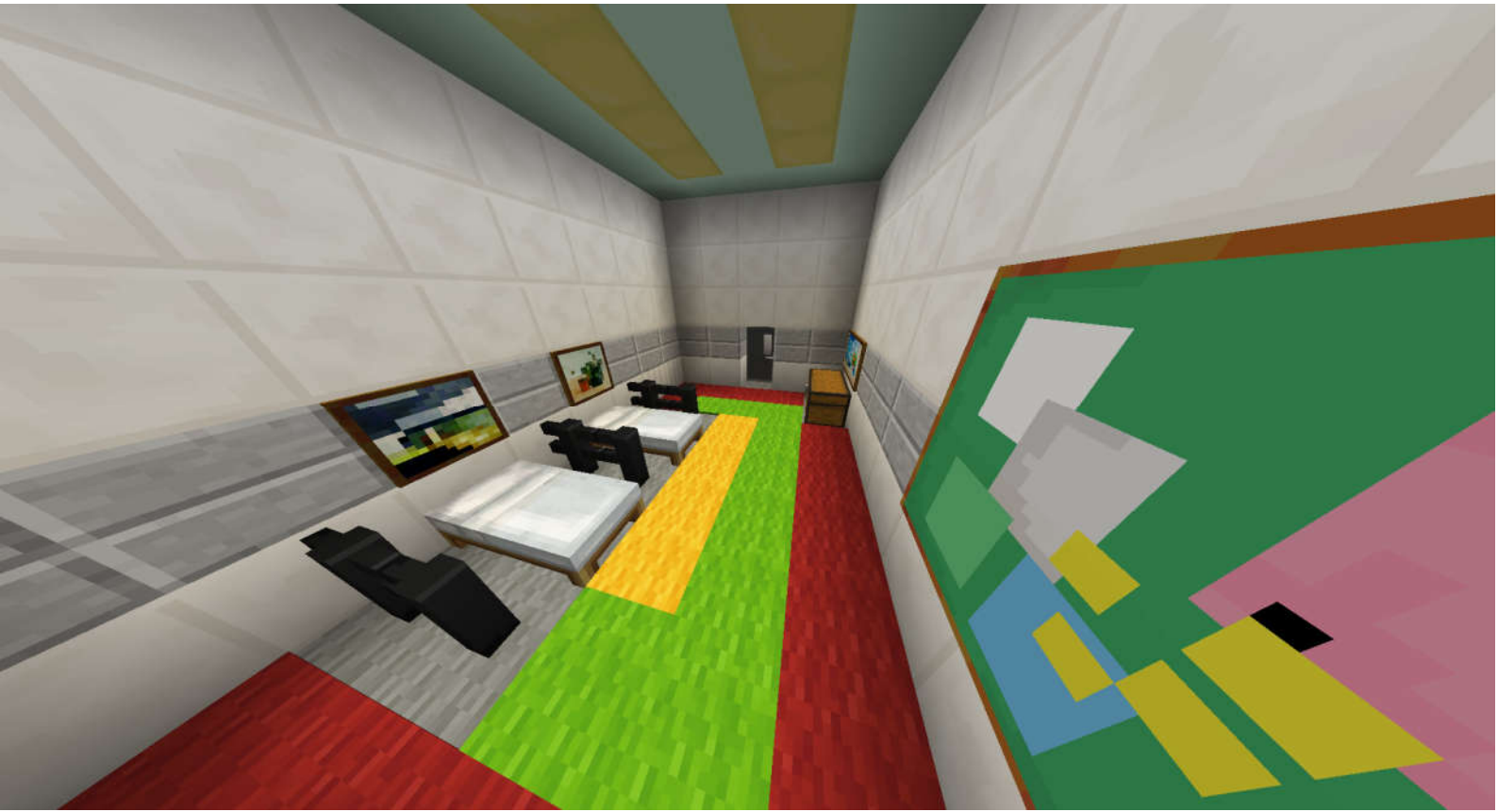
Goal 6: Clean Water and Sanitation

Ensure access to water and sanitation for all.

- For Goal 6 we **upgraded the water fountains** in our school to make them more **water conservative** and efficient. We also improved the conditions of the showers in our pavilion by rebuilding and retrofitting them. This will benefit the school as we will be conserving more water
- **Rainwater taken from a reservoir** will be filtered for use in the showers and toilets, further **reducing our water consumption** use from external sources in the school
- We further **improved our school's water quality footprint** by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, reducing untreated wastewater and substantially increasing recycling and safe water reuse
- We also **provided reusable water bottles** for student use, which means that students don't have to buy single-use plastic bottled water

and cuts down on not only our water usage, but also on consumption of single use plastics and their associated long-term waste.

Taken together, these actions form the basis of evidence of change that can be quantified and measured – and used as part of ongoing engagement on issues of water use, plastic production and consumption and what our water footprint's say about our school (and what we can do about it).

Goal 7: Affordable and Clean Energy

Ensure access to affordable, reliable, sustainable and modern energy for all.

Green-Schools link: Energy

- To make sure we are using sustainable energy in the school we implemented **solar panels** mainly over the roof of the school and some other areas making the school partly solar powered
- The school is also powered by a **wind farm we built consisting of three wind turbines** for wind power making a lot of the energy used in the school renewable and sustainable
- In an effort to double the global rate of improvement in energy efficiency, we **retrofitted the lights and electronics** in the school. We also put sensory lights in places around the school that people may not always be in, such as the toilets and the changing rooms
- To reach the target of doubling the global rate of improvement in energy efficiency, we also allowed more **natural light** into certain darker areas such as the *Sustainability Centre* where we added more windows to increase natural light

- The **digital VR facilities enable inter-school communication** and sharing, particularly in relation to international cooperation with Edmund Rice Network partner schools in developing countries to **facilitate promotion of clean energy research and technology**, including renewable energy, energy efficiency and advanced and cleaner fossil-fuel technology, and promote clean energy school infrastructure and clean energy technology.

Goal 8: Decent Work and economic Growth

Promote inclusive and sustainable economic growth, employment and decent work for all

- To further improve the education that takes place in school by providing mixed use of tablets and technology in learning contexts in order to access the internet for research purposes in class or for homework. It gives them access to other sources of information to **encourage critical engagement** with information
- We also implemented the use of photocopiers as a resource for students

- We made the **career classes available to the entire school** rather than just in Senior Cycle to senior students where it gives students more opportunities to find out which career path suits them
- We included more **business partnerships** in our project as it allowed for better opportunities for young people doing work experience and benefits the community as a whole through sharing of ideas, experience and building partnerships based on fair, decent work
- We **promoted environmentally sustainable, socially inclusive and decent work** for all students, and promoted this across our school network with the teachers, parents and students involved
- We checked **supply chains** for products and services used to and from the school in order to eradicate child labour, encourage information and awareness raising activities and a school-wide forum that debates the issues and reports on progress with companies and suppliers of services to the school.

Goal 9: Industry, Innovation and Infrastructure

Build resilient infrastructure, promote sustainable industrialization and foster innovation

Green-Schools link: Transport

- Using sustainable materials, we reconstructed the upper levels of the school, and added another entire level
- Falling in line with the Sustainable Development Goals, all **Transition Year mini-companies** were made 'green' with zero waste, we ran campaigns to get local businesses to work with them, and we supported the canteen in becoming greener, healthier and more sustainable
- A group was formed to debate and discuss the zoning, and future planning of Bray, in conjunction with other schools. This is tied to the parliament class we set up. This aims to **give the collective voice of young people** a platform in local politics and planning and the potential to link in with youth platforms, such as Comhairle na nÓg
- We **upgraded infrastructure and retrofitted the school** to make it more sustainable with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and practices. Procurement of construction materials such as timber and minerals used were sustainably sourced, such as Forest Stewardship Council timber etc.

Goal 10: Reducing Inequalities

Reduce inequality within and among countries

- For Goal 10 **we created several multi-faith rooms** in which students and staff of all religions can go and pray in, they are located on the first floor of the main building and are open to all at any time
- We also included a **poster campaign in our project that aims to raise awareness of the inequalities in the world** around issues such as income, age, gender, religion, disability, race, origin etc., and empower people to raise awareness and see how much inequality there is, inspiring students, parents and staff alike to stand up and take action against it as a whole-school community

- We decided that we would **source where sports kits and uniforms for school activities are produced** and make sure that they are from fair trade companies that are paying workers fair wages for the work they do and materials used are from sustainably managed sources.
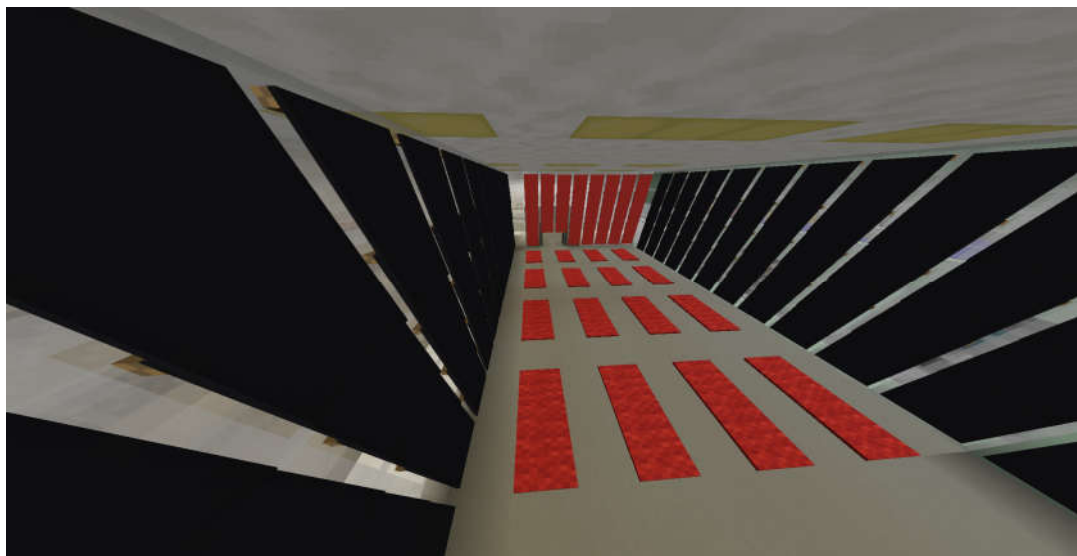
Goal 11: Sustainable Cities and Communities

Make cities and human settlements inclusive, safe, resilient and sustainable

Green-Schools link: Litter and Waste

For Goal 11, the changes we made were aimed at improving outside and public areas.

- We **improved the car park's format and layout** to make it safer for students walking to school and to avoid congestion in the morning and afternoon times
- Cycle lanes were added to ensure cyclists' safety on their way to and from school, which in turn **encourages students to cycle to school** (as part of mapping busy cycle routes within the broader school area and the safety of routes for students and staff alike)

- **Multiple open seating areas** around the school provide students with a place to eat lunch and work outside
- We designed a **public allotment space** where both the students of Pres and the Bray community can grow vegetables and other plants as part of a sustainable urban environment
- We **reduced the hostile environmental impacts of our school**, per person. We included a focus on air quality and school waste management facilities and procedures, and compared this to national and international good practice standards (for example, in line with the Paris Agreement on Climate Change).

Goal 12: Responsible Consumption and Production

Ensure sustainable consumption and production patterns

- We **created a wormery to substantially reduce organic waste generation** through prevention, reduction, and reuse, and managed separate bins for different kinds of waste, such as plastic, paper, compost etc. with a priority on food waste

- We have **reduced the use of printouts** and general paper usage by using computers instead of copy books and paper handouts.
- We added in a **rainwater collection point** so that we can take advantage of **harvesting natural resources** and stop having to use external facilities as the only source of water for the school. We also extended tree cover and a planted a tree nursery for on-site learning and use in the production of paper
- We **introduced and promoted sustainable school procurement practices** that are in line with global priorities (reducing carbon consumption and production), social and ethical considerations (fair wages, avoiding conflict-resources that are not certified etc.) and shared as part of school-based action plans
- We **reviewed companies that have contact with the school** (directly and indirectly) and brought students together for annual workshops on corporate social responsibility, waste and sustainable (or unsustainable) company practices in order to hold them accountable in our school as part of broader awareness raising work.

Goal 13: Climate Action

Take urgent action to combat climate change and its impacts

Green-Schools link: Climate Change

For Goal 13, we made modifications to the school policies as well as to the school area to combat climate change.

- By **retrofitting the school's heating, air conditioning and ventilation systems** to be more efficient, we reduced the amount of power needed to operate them. Installing high efficiency boilers, chillers, fan systems and motors results in Pres becoming as energy conservative as possible
- The **construction of a wind farm** by the school gates produces green energy for the school's use
- As part of **calculating our collective carbon footprint** in the school community, reduce carbon dioxide emissions by the **planting of a forested area** on school grounds, as the trees take in carbon dioxide and produce oxygen

- **Plugging school appliances into power strips** which are turned off when not needed further reduces wasteful practices
- Through the *Sustainability Centre*, **improve education, awareness-raising and school capacity** on climate change mitigation, adaptation, impact reduction and our connections to the wider world through education, research and school community platforms and discussions
- **Link up with schools in developing countries to share our work and learn from each other** in terms of transforming our school communities due to shared challenges in mitigating climate change and adapting to more sustainable ways of life.

Goal 14: Life Below Water

Conserve and sustainably use the oceans, seas and marine resources for sustainable development

Green-Schools link: Marine and Coast

Bray is a coastal town on the east coast of Ireland, so preserving marine life environments are crucially important for our community.

- We decided to **organise coastal clean-ups** in conjunction with other schools and community groups to increase sea and ocean health, and decrease marine pollution from land-based activities, including marine debris and nutrient pollution
- We **built an aquarium** and pond on the school grounds featuring native wildlife and species to use in habitat and environmental studies.
- **Liquid waste** would be filtered by passing it through plant beds and reeds. After it is cleaned it would flow into a pond made from the filtered waste
- An **aquaponic farm** was built behind the pavilion. Aquaponics is a sustainable method of farming as fish waste is used to fertilize plant crops, and excess crops are used to feed the fish, and the cycle repeats
- Taken together, these activities would be used as a **platform for discussing and learning about marine life and ocean health** and the impact of tourism, transport vessels, coastal use and the impact of fishing industries in terms of sustainability and our links to them.

Overall, these measures are to make Pres more sustainable, both as a school and as a part of the wider community.

Goal 15: Life on Land

Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

Green Schools link: Biodiversity and Nature

In Goal 15 we focused on greatly increasing the biodiversity of the school grounds.

- Our first step was **increasing the flora** in school and school grounds by planting more trees and wildflowers around the grounds, as well as constructing wall gardens. These **wildflowers** would also be pollinated by bees which live in the beehives installed on school grounds. Bug hotels and bird houses also were constructed to further increase the biodiversity of the school
- We **planted hedgerows** all over the grounds to allow wildlife to travel freely around the school. The hedgerows are also connected to Bray Head, which allows wildlife to move from the hillside through the school (and under the road using tunnels). **Liquid waste is filtered through**

plant beds (comfy plants) and turned to fertilizer, which is used to feed a pipe garden in the school

- Hands-on student-led **workshops on the biodiversity footprint of our school** as part of a town on a small island in a global ecosystem were established.
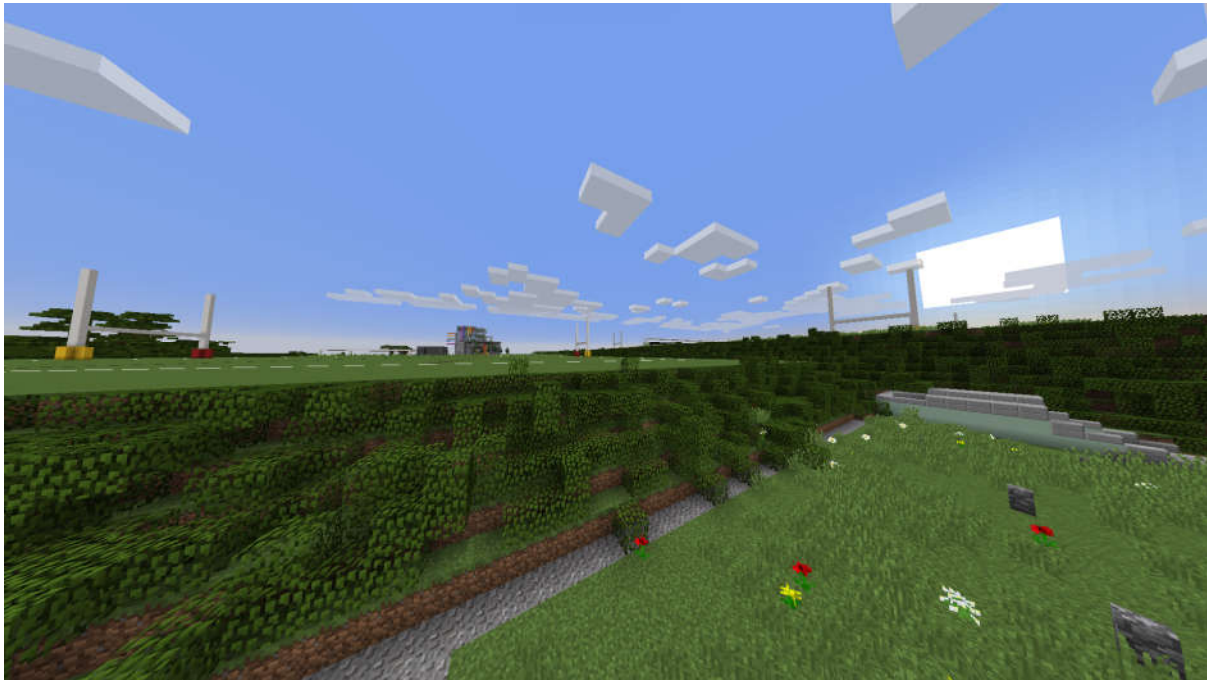
Goal 16: Peace, Justice and Strong Institutions

Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

Green-Schools link: Global Citizenship

- In accordance with Goal 16, we made Pres Bray adhere to it by **creating a safe environment where students and teachers can participate in joint-actions and agendas**, and resolve disputes. Building a parliament room, styled like the Irish Dáil, this will enable students to feel empowered, and create a more democratic system where the views of the students are adequately represented as part of decision making in the school community. This would work greatly with the already established Student Council

- We set up **anti-bullying workshops** and in the seminar room, to increase awareness of bullying and violence in all its forms in Ireland and globally.

By doing these things, Pres promotes peaceful and inclusive societies for sustainable development.

Goal 17: Partnerships for The Goals

Revitalize the global partnership for sustainable development.

- For Goal 17 we set up **fundraising and charity events** to raise funds for Irish charities and introduced a donation supplies box for donations of laptops and technology supplies to developing countries. These activities would be **accompanied by education workshops** to support student engagement on key international development, human rights and humanitarian issues and ideas
- We ensured that a **Procurement of Reliable Resources Committee** was established
- We ensured that **partnerships between the school and local council were strengthened**. The debates and decisions which would be made in the parliament room could be passed on to the local council
- We envisioned a **shared school network where teachers and students can share ideas and resources across the town** – i.e. acquiring chairs and desks from a school that no longer needs them.
- We **developed VR rooms to connect with communities overseas**. This aims to strengthen partnership with communities outside of Ireland to understand the impact of each other's actions and encourage dialogue with other groups.
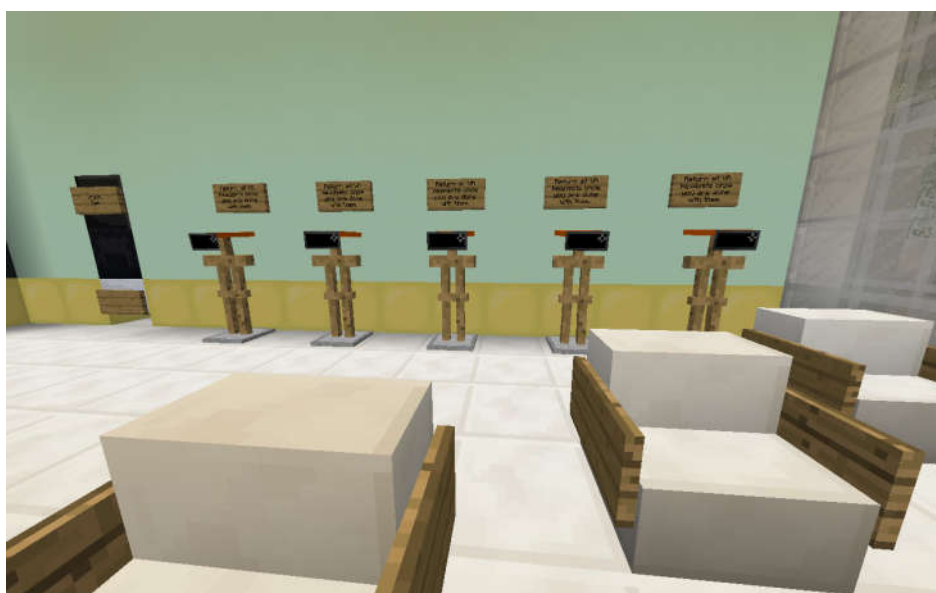
More information

Video: 17 Goals. 1 School and Minecraft – the video (9mins), published December 5th, 2017 youtu.be/aNbebJxp8Ic

Blog: Want a sustainable world? Build it. (December 6th, 2017) by project research student Darragh Domican on 80:20 Educating and Acting for a Better World at 8020.ie/blog

Presentation College, Bray project news, updates and more presbray.com

Let's Talk Project news, updates and more at 80:20 Educating and Acting for a Better World 8020.ie/projects/lets-talk

CREDITS

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Let's Talk is an education and action project which involves young people discussing, debating and taking action on issues of conflict, peace, reconciliation, climate change, sustainable development and justice in Ireland and beyond.

Let's Talk is supported by Concern Worldwide