

Clyde Waterfront Education curriculum resources

Lesson/project idea

'Homes'

<p>Title</p> <p>Homes for the future on the Clyde</p>	<p>Curricular area</p> <p>Science</p>	<p>Age group</p> <p>Early secondary</p> <p>Time allocation</p> <p>8 periods</p>
<p>Lesson/project focus</p> <p>Lesson: The importance of environmentally sound homes and new buildings</p> <p>Project: Design an environmentally sound home and present to peers and professional for feedback</p>	<p>Cross curricular links</p> <p>Technical Social Studies Expressive Arts</p>	<p>Cross cutting themes</p> <p>Citizenship; Enterprise in Education, 4-15 National Priorities</p>
<p>Short description</p> <p>Applying knowledge and understanding of climate change in a project to design an environmentally sound home for the future.</p>		
<p>Description</p> <p>Young people will investigate climate change in order to recognise the importance of building new homes with consideration for environmental impact. Pupils will engage with local property developers and architects to research methods of building which are environmentally sound. Young people will form architecture companies and design a home using solar energy/environmentally friendly materials.</p>		
<p>Aims of learning</p> <ul style="list-style-type: none"> • To meet learning objectives of the topic: how can we build new homes and reduce the impact on the environment? How can environmentally friendly practices be put into the real context of designing a home? • Develop enterprising skills by working as a company and establishing links with local businesses • Develop awareness of citizenship and environmental responsibility 		
<p>Outcomes of learning</p> <ul style="list-style-type: none"> • Subject knowledge enhanced and gained: climate change, recycling/solar energy; knowledge of how property developers are trying to incorporate environmentally sound practices into 		

building; recognition that homes of the future must take account of environmental factors

- Pupils have developed 4 capacities of CfE:
 - Confident individuals as communicating as a group and developing leadership skills
 - Successful learners as knowledge about climate change applied to a real design project
 - Effective contributors by developing/enhancing career skills
 - Responsible citizens through increasing knowledge of the effect of climate change and its impact on the building of new homes

Resources

- Local property developer (e.g. from Glasgow Harbour) to talk about environmental considerations to take into account when planning to build
- Architect to discuss design and environmentally friendly resources that could be used in building

Resources for project

- Images related to architectural design to provide stimulus and inspiration
- Art and design materials for production of design

Relevance to curriculum

- Supports 5-14 Environmental Studies
- Relevance of the environmental impact of new homes and how this can be lessened through responsible and considerate use of resources

How to develop an *enterprising* lesson

Developing confident individuals

How will you provide a *real* context for learning?

- Teams will replicate a real life situation by presenting their final design to an outside organisation
- Pupils will link knowledge of climate change with knowledge of planning and architecture to produce an environmentally sound design for a new home
- Pupils will work together to decide which methods of building and materials can minimise the impact on the environment
- Pupils will be given the chance to meet with local architect and discuss the practical considerations of designing a new home

Developing responsible citizens

How will you give *responsibility* to pupils for their learning?

- Independent learning developed through research about climate change and its relevance to property development
- Pupils increase awareness of the need to consider environmental factors in the design of new homes

Developing effective contributors

How will you develop *relationships*?

- Pupils work as a team and collaborate on aspects such as materials, cost, time factors etc
- Internal and external partners were used to demonstrate the factors to be taken into account when designing a building

Developing successful learners

How will you *reflect* on this learning?

- At all stages in the process there will be opportunities for self/peer assessment
- At the end of the project, groups will be asked to present their final design, perhaps to an external partner

Developing lifelong and employability skills

How will you establish links with external partners in order to put this into a real context and make this more relevant for young people?

Links with external partners:

Employers/business

- Input from local Architect
- Property development company to discuss practical implications of building an environmentally sound home

Local community

- Local council recommendations about buildings in the area

Families

- Discussions about opinions and ideas for these buildings

Is there an opportunity to highlight career opportunities?

- Working with developers will highlight many opportunities in the area for careers

Reviewing the process

If this is a lesson idea, how could you involve other curricular areas?

Technical Studies: Graphic design

Science: climate change

Could it be incorporated into an activity/project with a higher profile (for example, presentation, competition, production of materials, event)?

- Competition for winning design to be made into model for display at local architecture company
- Ideas into articles for school web or newsletter

Brief outline of plan

Timing	Input and content	Teacher activity	Pupil activity
2 periods	<p>Introduction to climate change and the need for responsible building of homes</p> <p>Establish that groups will design an environmentally sound home for the future</p> <p>Architectural companies formed</p>	<p>Stimulates discussion by asking:</p> <ul style="list-style-type: none"> • What is climate change and how can we build responsibly? • What are the visible effects of climate change? • Are there ways in which we could make homes more environmentally friendly? 	<ol style="list-style-type: none"> 1. Pupil's brainstorm on effect of climate change 2. Discussion of why it is important to build responsibly 3. Brainstorm ideas on how we can build to minimise effect on the environment
2-3 periods	<p>Introduction to architecture and property development. How environmental considerations are dealt with within these industries</p> <p>Solar energy/recycling/carbon footprints and their relevance to design of new homes</p>	<p>Introduces topic by asking:</p> <ul style="list-style-type: none"> • How do businesses currently try to limit environmental impact? • Can we make use of solar energy in our designs? • How costly is the design of a new home? • What building materials can we use to limit damage to the environment? 	<ol style="list-style-type: none"> 1. Pupils discuss types of building materials to be used 2. Pupils research solar energy/recycling 3. Architecture companies formed 4. Companies brainstorm possible designs and consult with architect/property developer on technical aspects of design
3 periods	<p>Final design- a 'home for the future'</p> <ul style="list-style-type: none"> • Layout of home established • Building materials discussed • Overall understanding of the complex nature 	<ul style="list-style-type: none"> • What materials are most suitable for our environmentally friendly home? • How will we assign roles within the company? • How can we produce a professional looking design? • Can we justify our choices to our peers/external partners? 	<ol style="list-style-type: none"> 1. Pupils continue to consult architect/property developer 2. Pupils work together to produce a professional design, perhaps using ICT 3. Companies make decisions about materials that could be used in design

	of building		4. Companies decide how they would present their ideas in a talk and evaluate their own design
1 period	Presentations	<p>Facilitate presentations from group to peers and experts:</p> <ul style="list-style-type: none"> • Presentation • Discussion • Evaluation 	<ol style="list-style-type: none"> 1. Teams present their finished design to peers and business representatives 2. Discussion on designs with peers and experts 3. Evaluate achievements and learning gained – both subject and personal