Disclaimer:
This learning journey was originally created as part of the Game On Scotland programme. Although the original purpose was to support learning around the Commonwealth Games it can be applied to other educational contexts.
Learning journey - Transport
Focus: Sustainability    CFE Level: First / Second / Third

Introduction:
This learning journey is one of a series designed to promote an understanding of sustainability issues through the context of the Commonwealth Games. Large international events can have a significant environmental impact but organisers of the Glasgow 2014 Commonwealth Games want to build on the city’s historic reputation as a ‘dear green place’ and use the investment opportunities provided by the event to help make Glasgow one of the most sustainable cities in Europe. In staging ‘the greenest games yet’ organisers have had to consider how to transport thousands of athletes, officials, volunteers, employees and spectators around the city in an efficient and sustainable way which minimises pollution and journey times. This learning journey provides learners with an opportunity to consider the issue of sustainable transport (past, present and future). Suggested activities are aimed at learners aged 5-11 years but can be adapted to suit a range of ages.

Prior learning:
Prior understanding about ‘trade’ would be useful and learners would benefit from having some experience of identifying features on a map.

Learners will be expected to have research skills to complete these activities and would also benefit from an understanding of various forms of transport and the concept of carbon emissions.

The other learning journeys in this series explore the issue of sustainability in relation to events management and community regeneration.

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Interdisciplinary opportunities:
The activities in this learning journey provide opportunities for learning across social studies, technologies and literacy.

Further suggestions for interdisciplinary learning include:

Expressive arts / languages - Learners could organise a media campaign to encourage people to travel to school in a sustainable way.

Technology / higher order thinking skills / creativity - Learners could design and build model versions of a sustainable form of public transport.
Capabilities:
This learning journey aims to develop the four capacities of Curriculum for Excellence in the following ways:

**Successful learners:** The Commonwealth Games provide an exciting and relevant context which will help motivate learners and encourage them to be enthusiastic about learning. Imagining sustainable forms of transport will require them to be open to new ideas and give them an opportunity to think critically and creatively.

**Confident individuals:** Learning about sustainable forms of transport will encourage learners to pursue an active and healthy lifestyle. They will also learn about ambition through the ambition of the organisers to make the Glasgow 2014 Commonwealth Games ‘the greenest yet’.

**Responsible citizens:** The activities in this learning journey provide learners with an opportunity to evaluate environmental, scientific and technological issues and make informed, ethical decisions. The Games provide an opportunity to consider how we can contribute culturally, socially and economically to society.

**Effective contributors:** In giving considerations to complex issue relating to sustainable transport, learners will learn about resilience and self-reliance. They will also be given the opportunity to apply critical thinking in new contexts and solve problems.
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Relevant Experiences and Outcomes:

Literacy:
- Using what I know about the features of different types of texts, I can find, select, sort and use information for a specific purpose.  *LIT 1-14a*
- I am learning to make notes under given headings and use them to understand information, explore ideas and problems and create new texts.  *LIT 1-15a*
- I am learning to use my notes and other types of writing to help me understand information and ideas, explore problems, generate and develop ideas or create new text.  *LIT 1-25a*
- Using what I know about the features of different types of texts, I can find, select and sort information from a variety of sources and use this for different purposes.  *LIT 2-14a*
- I can make notes, organise them under suitable headings and use them to understand information, develop my thinking, explore problems and create new texts, using my own words as appropriate.  *LIT 2-15a*
- I can use my notes and other types of writing to help me understand information and ideas, explore problems, make decisions, generate and develop ideas or create new text.

   I recognise the need to acknowledge my sources and can do this appropriately.  *LIT 2-25a*

Social Studies:
- By exploring places, investigating artefacts and locating them in time, I have developed an awareness of the ways we remember and preserve Scotland’s history.  *SOC 1-02a*
- I can use evidence to recreate the story of a place or individual of local historical interest.  *SOC 1-03a*
- I can consider ways of looking after my school or community and can encourage others to care for their environment.  *SOC 1-08a*
- I can interpret historical evidence from a range of periods to help to build a picture of Scotland’s heritage and my sense of chronology.  *SOC 2-02a*
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- I can investigate a Scottish historical theme to discover how past events or the actions of individuals or groups have shaped Scottish society. **SOC 2-03a**
- I can discuss the environmental impact of human activity and suggest ways in which we can live in a more environmentally-responsible way. **SOC 2-08a**

Technologies:
- I can work with others to generate, discuss and develop imaginative ideas to create a product of the future. **TCH 1-01b**
- Throughout all my learning, I take appropriate action to ensure conservation of materials and resources, considering the impact of my actions on the environment. **TCH 1-02a**
- Having analysed how lifestyle can impact on the environment and Earth's resources, I can make suggestions about how to live in a more sustainable way. **TCH 2-02a**
- I can investigate the use and development of renewable and sustainable energy to gain an awareness of their growing importance in Scotland or beyond. **TCH 2-02b**
- From my studies of sustainable development, I can reflect on the implications and ethical issues arising from technological developments for individuals and societies. **TCH 3-02a**
Learning experience A: The History of transport on the River Clyde

Introduction
Learners will look at the importance of the River Clyde in bringing people to Glasgow and supporting global trade links. They will also explore how modes of transport have changed over the ages.

Stimulus:
The Clyde Waterfront website has a good selection of historical and contemporary videos about the River Clyde:

Key learning
Learners can:
- Evaluate and compare the efficiency and sustainability of different forms of transport throughout the ages
- Consider the importance of the River Clyde to Glasgow's success as a trading city.

Possible learning opportunities / tasks
- Plot a timeline of modes of transport linked to the River Clyde e.g. sailing ships, steamboat, paddle steamer, modern shipping.
- Compare this to how land-based transport was changing in the same period.
- Investigate the story of the SS Cameronia – the Clyde-built ship which is the inspiration behind the mascot Clyde.
- Depict the global trading routes emanating from Glasgow, together with the commodities traded, on a world map.

Useful resources
Shipbuilding on the Clyde
http://www.educationscotland.gov.uk/scotlandshistory/makingindustrialurban/shipbuilding/index.asp

Historic Glasgow – River Clyde

Scotland’s History - Tobacco, sugar and cotton
http://www.educationscotland.gov.uk/scotlandshistory/jacobitesenlightenmentclearances/tobacco/index.asp

Virtual Mitchell – River Clyde images

Possible evidence
Learners can:
- Create a timeline depicting the changes of water and land-based methods of transport in Glasgow and on the Clyde
- Produce a creative piece of writing about the SS Cameronia
- Create an annotated world map depicting the historical trading routes to and from Glasgow.

Reflecting on learning
Learners should be encouraged to evaluate the sustainability of various modes of transport (past and present) and discuss the impact on people’s lives e.g. journey times, prevalence of diseases on long voyages, danger and likelihood of accidents etc.

Taking it further
Learners could take learning deeper by investigating Glasgow’s historical involvement in the slave trade and by considering the ethics of trading commodities like tobacco. Learners could also explore the role of trade in generating extreme wealth for trading merchants while many lived in abject poverty in Glasgow slums.

Scotland’s History – slave trade
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Learning experience B: Transport across the city

Introduction
This learning experience allows learners to investigate the different methods of transport within a modern city. Using the context of the Glasgow 2014 Commonwealth Games, they will consider how best to move large number of people across the city in the most efficient and sustainable way.

Stimulus
Learners could plan a journey from their home to one of the sporting venues of the Glasgow 2014 Commonwealth Games.

Key learning
Learners can:
- Compare and contrast transport options in terms of sustainability
- Measure carbon footprints
- Justify travel decisions based on environmental impact
- Present data analysis in a chosen graphics format.

Possible learning opportunities / tasks
- Plan routes for the athletes from the Athlete’s Village to the sporting venues – the journey times must be quick and the method of transport sustainable.
- Plan an integrated public transport system allowing spectators to attend a range of events across the city.
- Gather data concerning daily journeys to school and graph the results. Use the Schools Global Footprint calculator to measure the carbon footprint and compare impact of various methods of transport.

Possible evidence
Learners can:
Develop a transport plan for the athletes and/or spectators to get them to the sporting venues from the Athlete’s Village or main transport hubs (rail and bus stations)
Design a personalised green travel plan for an imaginary spectator, Games volunteer or athlete
Justify their own travel plans based on evidence and data relating to carbon emissions.

Useful resources
Glasgow 2014 - Transport Plan (PPT)

Traveline Scotland – plan a journey

Education Scotland – Schools Global Footprint Calculator
http://www.educationscotland.gov.uk/schoolsglobalfootprint/

Greener Scotland – types of transport
http://www.greenerscotland.org/travel

Sustrans – Glasgow cycle network

Reflecting on learning
Learners should be encouraged to investigate and discuss the advantages and disadvantages of various sustainable transport options within the context of the Games or their own town/city. Is green travel realistic, cheaper, safer or healthier? What impact would using green travel methods have on their lifestyle?

Taking it further
Revisit your school travel plan in light of what has been learned. Produce a ‘sustainable route’ to school plan for parents and launch a campaign to reduce the numbers of parents using their cars to drop children at school.

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Learning experience C: Transport of the future

Introduction
This learning experience provides learners with an opportunity to design more environmentally friendly transport systems and create an imaginative vision for the future of transport.

Stimulus
Fastlink Bus Service - River Clyde
http://www.spt.co.uk/corporate/about/projects/fastlink/

Masdar City – transport of the future
http://youtu.be/7UMvj2ZYnU8

Key learning
Learners can:
• Imagine alternative forms of transport for the future
• Create a greener transport infrastructure plan within a specific community, town or city
• Defend their plans based on evidence and reasoned argument.

Possible learning opportunities / tasks
• Research local, national and global developments which are seeking to make transport more environmentally friendly - from electric cars to car clubs to city bike schemes.
• Create imaginative designs for environmentally friendly vehicles of the future.
• Develop a futuristic integrated transport plan for your local town or city.
• Design an advertisement campaign encouraging people to switch to their new transport system.

Useful resources
Greener Scotland – travel
http://www.greenerscotland.org/travel

Car Plus – car sharing scheme
http://www.carplus.org.uk/

GreenMuze – Future of Transport

Future transportation
http://psipunk.com/

Possible evidence
Learners can:
Create an integrated and sustainable transportation plan

Design environmentally friendly, original and innovative public and personal transportation devices

Write about the journeys and travel plans they will be making 40 years from now. Compare this with the journeys of the present.

Reflecting on learning
Learners could be encouraged to critically reflect on their own ideas and the ideas of others. Will they be sustainable, practical and attractive to users? Will we have enough resources (metals, energy, minerals) to mass produce new vehicles? How could their ideas be improved?

Taking it further
Find out about all the locally available green transport options – cycle paths, car clubs, bike schemes etc. Develop attractive materials to make people aware of these options and promote them to parents and the wider community.