

COMMUNITY RESILIENCE

AND CURRICULUM FOR EXCELLENCE

The local river has burst its banks and floodwater is starting to come into the ground floor of your house. You have just a few minutes to save important documents and your valuable possessions from flood damage.

A deluge of snow has blocked your community off from the outside world and has damaged power lines and phone lines. It may be days before help arrives. How will you get by? What about your elderly neighbours?

**Want to find out how to prepare for emergencies and keep yourself and others safe?
Read on to find out more about community resilience as a context for learning within
Curriculum for Excellence.**

ARE YOU READY?

Are you ready for severe weather, utility failure, flooding or pandemics? Make sure you know what to do. Stay informed, pack a kit, make a plan.



WHAT IS COMMUNITY RESILIENCE?

Our climate is changing and communities across Scotland are becoming increasingly affected by extreme weather events and flooding which can block roads, destroy homes and lead to loss of power for thousands of people.

A host of highly-trained individuals work around the clock to prepare for such emergencies and protect our communities when they happen. However, when emergencies strike they will not always be able to help everyone immediately. They will focus on the most vulnerable and those most in danger. You may find yourself having to cope alone with your family and neighbours for some time. In these situations, actions taken by individuals and communities can make a real difference.

Community resilience is about communities and individuals using their collective resources and skills to help themselves prepare for, respond to and recover from emergencies.

FACT FILE

- Scotland's west and north coasts receive between 45%-51% more winter rainfall than they did in 1961.
- December 2015 was the wettest on record in Scotland.
- Flooding across the UK in 2015 caused an estimated £5 billion of damage.
- In Scotland, 108,000 properties are at risk of flooding, 73% of them are residential.
- Over 1,000 properties were affected by winter flooding over Christmas 2015.
- 2015 was the warmest year on record. Scientists estimate the average global temperature has increased by 1°C over pre-industrial levels. This could rise by 2°C to 6°C by the end of the century.
- UK Government spent £473 million on stockpiling medicines in preparation for a swine flu outbreak.



Massive snowfall on the island of Arran in 2013 cut power to 3,876 homes for up to 8 days. Phone lines, both landline and mobiles, were knocked out. Access to the north, south and west of the island was blocked by snow drifts of up to fifteen feet.

Image courtesy of Sniffer.

MAKING CONNECTIONS

When planning learning relating to community resilience, choose contexts for learning most relevant to your local area. You may also want to consider how it can support learning within and across curriculum areas.

STEM – community resilience provides an exciting context for STEM (Science, Technology, Engineering and Mathematics) subjects. This can include learning about the ways engineers protect communities from flood water or about how remote sensing technology can provide early warning to communities in danger. It may also include the use of mathematics to analyse data and develop logistical plans to ensure many communities get support quickly.

Learning for sustainability (LfS) – LfS <http://bit.ly/lfsonline> weaves together global citizenship, outdoor learning and sustainable development education into a coherent whole school and community approach. It is an approach to learning, life and work that enables learners to engage with real world issues and helps build a more sustainable, socially-just and equitable society. LfS connects young people to the important issues in their communities, such as those relating to climate change and community resilience, and encourages young people to become involved in community action programmes. The United Nations Sustainable Development Goals can enrich learning in relation to LfS <http://www.globalgoals.org/>.

Children's rights – Emergency situations provide an important context to learn about children's rights and how communities can pull together to ensure that everyone is safe and secure, especially any groups who may be particularly vulnerable or require special consideration. Considering community resilience through children's rights can support this <http://bit.ly/reconisingrights>.

Developing the Young Workforce (DYW) – Embedding employability skills and awareness of careers into the curriculum at all stages equips learners with the skills for learning, life and work. We are familiar with the blue light services, fire, police and ambulance, and the work they do to protect our communities. However, community resilience provides a great opportunity to promote awareness of the other resilience professionals who help us including emergency planners, civil contingency and flood management officers <http://bit.ly/DvYngWrkfr>.

Eco-Schools Scotland – The refreshed Eco-Schools programme links community resilience with work on self-directed, local and global themes connected to the Sustainable Development Goals. For example, the causes of local and global flooding can be explored through Eco-Schools' work towards Goal 11 (Sustainable Cities and Communities) and Goal 13 (Climate Action) <http://bit.ly/EcoSchoolScot>.



Learners visit a sustainable urban drainage scheme (SUDS) to learn about the ways our homes are being protected from flooding. Photo courtesy of Abertay University.

WHAT CAN SCHOOLS DO?

- **Embed** community resilience as a context for learning within the curriculum to develop learners' understanding of the causes of emergencies and how they can affect communities.
- **Nurture** the skills, capabilities and attributes of learners to help them become confident and resilient individuals.
- **Discuss** scenarios as a class – **What would you do if...?**
- **Help** learners and their families to prepare for emergencies by explaining how they can stay informed, make a 'grab-bag' kit and put a plan in place.
- **Raise awareness** of important phone numbers and support that is available when emergencies occur.
- **Establish** a school community resilience group, perhaps linked to the health and wellbeing committee. The group could lead monthly assemblies on community resilience themes and promote community resilience during *Ready for Winter* week <http://www.readyscotland.org/>.
- **Arrange visits** to flood protection schemes in your area.
- **Identify** people in your community, such as elderly residents, who might appreciate your help – offer to lend a hand with grocery shopping or other essential tasks like clearing snow and ice from their pathways.
- **Contact** your local authority to find out if there is a community resilience group in your area and to see how you can get involved. Schools can play a key role in local emergency plans and are sometimes used to provide emergency accommodation.



2,000km
of road network is at risk of flooding



500km
of rail pass through high risk areas



200,000 hectares
of agricultural land at risk of flooding

Learning about porous surfaces (above left) and analysing surface water run-off for suspended solids (left). Photos courtesy of Abertay University.

FOCUS ON FLOODING

Flooding is one of the most common emergency situations in Scotland and affects many homes and communities. Taking action now to prepare for flooding can protect your home and possessions and can help you recover more quickly when floods occur.

The main types of flooding in Scotland are:

- River flooding – when rivers and burns burst their banks due to high volumes of water
- Coastal flooding – high tides and storms create unusually high sea levels or big waves
- Surface water flooding – heavy rainfall fills the drains and sewers which then overflow.

WHAT CAN YOU DO TO STAY SAFE?

Know your risk – check SEPA's flood map to see if the area you live in is at risk of flooding.

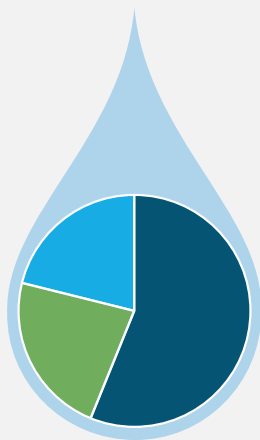


Sign up to Floodline at <http://www.floodlinescotland.org.uk> to receive text alerts so you get advance notice of impending floods.

Create a flood plan – make sure you've thought about all members of the family and don't forget about your pets.

Prepare a 'grab-bag' of essential items. Remember you may be out of your house for days.

£252 million
expected annual
flood damage



- 56% river flooding
- 23% surface water flooding
- 21% coastal flooding

WHAT GOES INTO A FAMILY FLOOD KIT?

It should include a **torch**, **first aid kit**, **warm and waterproof shoes and clothing**, **supplies of prescription medicines**, **bottled water**, **food**, **rubber gloves**, **children's supplies**, **pet supplies**, **insurance details**, **portable radio** and **spare batteries**, and a **rucksack** in case of evacuation.

**formal flood protection
or engineering works**



10,000
properties protected
by the 42 schemes

£1,310m
potential value
of benefits



HEALTH AND WELLBEING – RESPONSIBILITY OF ALL

- Assess and manage risk.
- Protect themselves and others.
- Demonstrate how to keep themselves and others safe.
- Discover about the wider world of work.

SOCIAL STUDIES/ GEOGRAPHY

- Describe the physical processes of a natural disaster and evaluate the impact on the people and the landscape.
- Play a part in caring for the environment and encourage others to do this too, make this a class focus.
- Measure and record the weather and discuss how it impacts on daily life.
- Explore and discover interesting features of the local environment like flood protection schemes and be able to place on a map.
- Discuss issues around land use and the community.
- Compare and contrast the local area with somewhere else – how do they cope with flooding and other resilience issues?

TECHNOLOGY

- Estimate and measure by using appropriate instruments and units.
- Develop and use problem-solving strategies to construct models.

LITERACY

- Communicate information about staying safe through a talk/presentation at assembly and to the whole class.
- Debate local issues like flood protection schemes and staying safe in emergencies.
- Describe and share experiences of resilience issues that have affected them through creation of spoken or written text.
- Create new written texts like an information leaflet or a safety brochure.
- Use local context to find and use information for report writing.

SCIENCE

- Explain some of the processes which contribute to climate change.
- Identify symptoms of some common diseases caused by germs.
- Recognise how germs are spread and discuss how some methods of preventing and treating disease benefit society.
- Explore how the body defends itself against disease.
- Describe how vaccines can provide protection.
- Research methods used for water purification to prevent the spread of disease.



Building a model of a sustainable urban drainage pond. Photo courtesy of Abertay University.

SUPPORT FOR SCHOOLS

Local authority resilience officers across Scotland are helping schools learn about community resilience in a number of exciting ways:

- Sharing detailed information about flood plains, flood protection schemes and other areas of interest in the local area
- Sharing information about local emergency and community action plans so schools are aware of efforts to protect their local community and what support they can provide in times of emergency
- Sharing data and images from sensors, such as from traffic monitoring, to bring the learning to life in the classroom.

Contact your local authority to find out more about what may be available to help your school learn about community resilience.

USEFUL RESOURCES

- Ready Scotland <http://www.readyscotland.org/>
- British Red Cross <http://bit.ly/RedCrossTchg>
- SEPA kids <http://www.floodlinescotland.org.uk/floodline-kids/>
- Scottish Water <http://bit.ly/ScotshWtr>
- Go Safe Scotland <http://www.gosafescotland.com/>
- RNLI <http://bit.ly/RNLIwbste>
- Adaptation Scotland – discover what climate change in Scotland would look like through six visuals <http://bit.ly/CimtRdyPlcs>
- Scotland's Environment Web contains resources across a range of topics <http://www.environment.scotland.gov.uk/get-learning>
- The Global Goals for Sustainable Development – resources to help with learning and teaching about the Sustainable Development Goals <http://www.globalgoals.org/>

The Flood-Repairable House

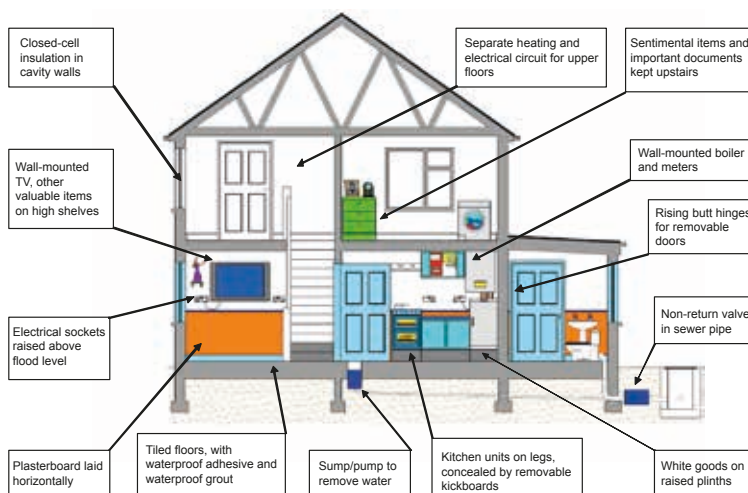


Diagram courtesy of Defra.

Image courtesy of SEPA.





Completing a mosaic for the Brechin flood wall.
Photo courtesy of Angus Council.

COMMUNITY RESILIENCE IN ACTION

Dallas Primary, Moray

Dallas village experienced extreme flooding in 2014. This highlighted a need for learning about community resilience and emergency planning. Learners created a scaled 3D map of their local area in papier-mâché, which helped them understand why the flooding had happened. Pupils became effective contributors, when links were made with the local emergency planning officer and SEPA who helped them create a community resilience plan. The project was successfully used as a learning context in literacy, science, social studies and health and wellbeing. It also supported Eco-Schools activity.

Dumfries Academy, Dumfries and Galloway

Dumfries Academy is beside the River Nith which floods regularly. The geography teacher used this as an opportunity to engage with the local environment. Flood officers were invited in to speak to the class to explain in more detail what is in place to keep the community safe. The class visited the site of the proposed flood protection scheme as well as local shop keepers who had been affected by flooding. This enhanced course work on flooding and rivers.

Brechin flood protection scheme

The engineers working on the Brechin flood protection scheme provided opportunities for local schools to visit. The engineers are planning to create an outdoor classroom in one of the new flood embankments to encourage local schools to use the area as a classroom. The community have been involved in designing mosaics for the flood wall.

REFLECTIVE QUESTIONS

- How can community resilience be used as a context within the curriculum to make learning relevant and engaging for learners?
- How can community resilience support interdisciplinary learning and learning for sustainability?
- What opportunities exist to include community resilience themes in your STEM, Eco-Schools, children's rights or developing the young workforce activities?
- What support, opportunities and community partners are available locally to support learning about community resilience?