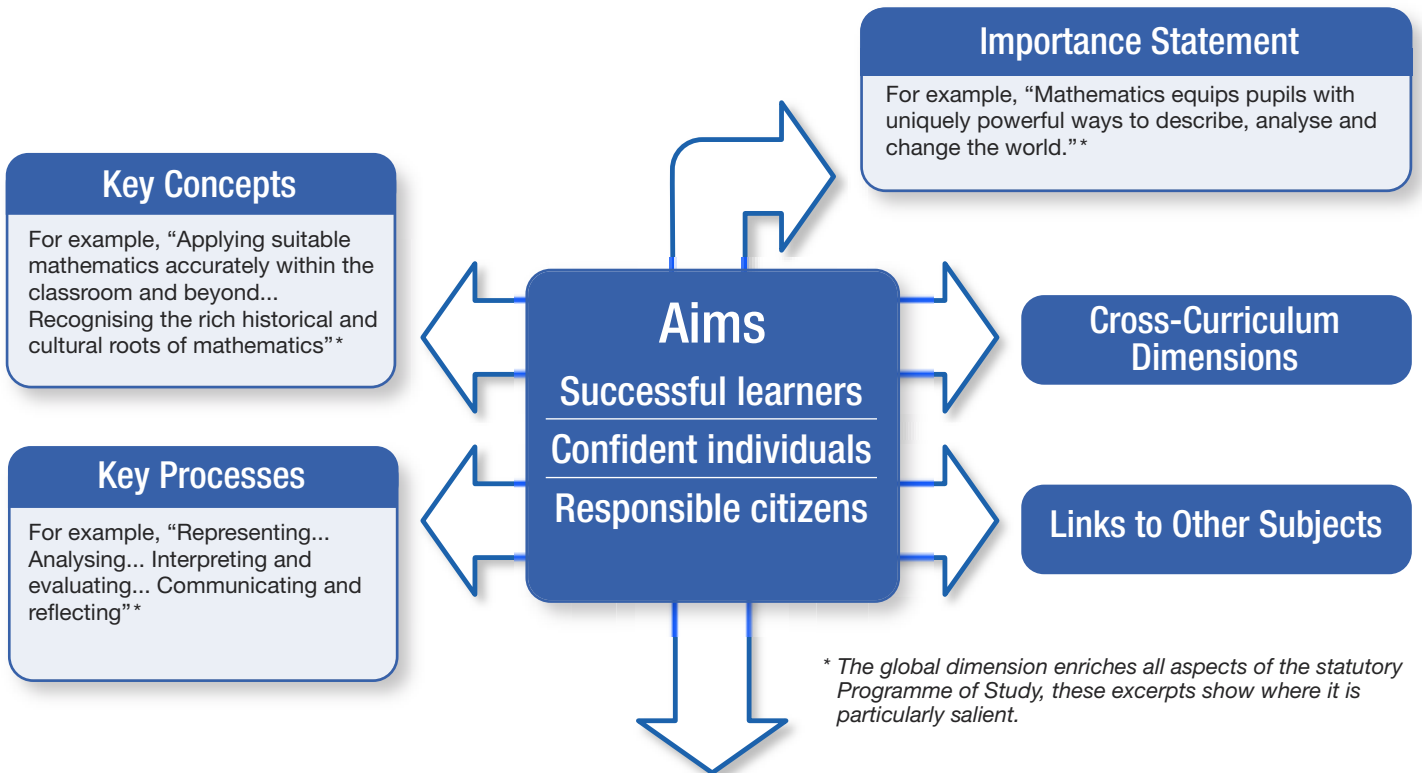


Exploring the Global Dimension to Mathematics

Mathematics has roots in a range of cultures. Students can apply it to issues of global importance such as population, consumption, poverty and access to resources, recognising that the way it is applied affects perceptions of these issues.



Eight Key Concepts of the Global Dimension

Global Citizenship

For example, exploring how mathematicians have brought about social change.

Interdependence

For example, exploring the diverse cultural roots of mathematics.

Social Justice

For example, exploring data around global issues.

Human Rights

For example, exploring data around human rights abuses.

Conflict Resolution

For example, working together collaboratively and using conflict creatively.

Diversity

For example, exploring a range of approaches to mathematics such as the different bases used in different times and places.

Sustainable Development

For example, analysing global economic, environmental and social data and patterns.

Values and Perceptions

For example, recognising the use and manipulation of statistics in the media.

The eight key concepts form part of the cross-curriculum dimension, 'Global dimension and sustainable development'.

A few examples

Data handling and interpretation

To develop their understanding of the concepts of social justice and human rights, students use data to plot a bar chart comparing the life expectancies of eight countries, comparing males and females. Then they select other data from the same source which may be a factor in determining life expectancy, such as access to clean water or number of people per doctor. They discuss what this information may imply in relation to life expectancy and whether this information is enough for them to be able to draw conclusions. Questions about inequality and human rights can arise from their discussions and debate.

Using ratio, proportion and percentages to investigate the cost of transporting commodities between countries

To explore the concepts of sustainable development and interdependence, students compare the percentage cost of the transport of goods and commodities from various countries in the world to the UK and discuss how this might be reflected in the relative costs for consumers and the amount paid to the producers. This can lead to further discussion about the relationship between producers and consumers and highlight some ways in which their own lives and consumer choices are linked to people in other parts of the world.

Mathematical applications and implications

Students can look at water supply in their locality and compare it with water supply in another locality, looking at precipitation figures, storage (for example, in reservoirs) and distances and transferability from the source to the user and compare their findings. Questions can arise about, for example, what happens when there is a drought in either locality. Students can explore the cost of various measures which may be used to address such issues in their own and the other locality.

Geometry

Geometry can be used as a way of perceiving the world, for example, the symmetry in architecture. Students can explore the influence of a range of cultures on mathematical understanding and create their own geometric designs inspired by, for example, Islamic art and architecture, using the techniques they have learned.

Students can investigate, for example, the claims made to have first articulated the theorem commonly known as Pythagoras' Theorem.

Find out more

The Global Dimension Website

Search for a wide range of global dimension teaching resources; find local organisations to support you, including Development Education Centres; and sign up to the termly Global Dimension newsletter at: www.globaldimension.org.uk

To download additional copies of this leaflet and tell us how you have used it, please go to: www.globaldimension.org.uk/explore

The Mathematical Association

www.m-a.org.uk

The Association of Teachers of Mathematics

www.atm.org.uk

QCA Secondary Curriculum Website

<http://curriculum.qca.org.uk>