

Numeracy in Social Studies

Examples of contexts for learning across Social Studies to improve numeracy skills.

Introduction

Curriculum for Excellence emphasises the importance of ensuring that learners engage in joined up learning, where they use their skills across different areas of content and context. The teaching of numeracy is the responsibility of all curricular areas. Social Studies offer a rich opportunity to contextualise numeracy for children and young people. Across the range of Social Studies subjects there are many opportunities to enable learners to improve their numeracy skills, whilst enjoying the exciting learning opportunities which these contexts provide..

Numeracy has eight organisers

- Estimation and rounding
- Number and number processes
- Fractions, decimal fractions and percentages
- Money
- Time
- Measurement
- Data and analysis
- Ideas of chance and uncertainty

This paper offers examples of contexts across Social Studies where numeracy skills can be progressed and provides links to the Significant Aspects of Learning and the Learning Statements as well as to the National Numeracy Progression Framework. There are some links to the Maths experiences and outcomes, as particularly geographical skills can also align to mathematics.

Significant aspects of learning

The significant aspects of learning for Social Studies are:

- SAL 1 – understanding the place, history, heritage, and culture of Scotland and appreciating local and national heritage within the world
- SAL 2 - developing an understanding of the world by learning about how people live today and in the past
- SAL 3 – understanding political, social and environmental issues
- SAL 4 - becoming aware of change, cause and effect, sequence and chronology
- SAL 5 - understanding the principles of representative democracy, participation and citizenship by practicing democracy through electoral participation and active citizenship in the school and local community
- SAL 6 - using and applying skills in creating models, maps and graphical representation of information
- SAL 7 - locating, exploring and linking periods, people, events and features in time and place developing useful skills for learning, life and work.
- SAL 8 - gaining business enterprise skills and knowledge and an understanding of the importance and methods of managing finance
- SAL 9 - developing useful skills for learning, life and work

The significant aspects of learning for Numeracy and Mathematics are:

- SAL 1 - Use knowledge and understanding of the number system, patterns and relationships
- SAL 2 - Use knowledge and understanding of measurement and its application
- SAL 3 - Use knowledge and understanding of shape and space
- SAL 4 - Research and evaluate data to assess risks and make informed choices
- SAL 5 - Apply numeracy and mathematical skills

Contexts for learning

Level/ Organiser	Possible context for learning	Learning Statements	Social Studies Significant Aspects of Learning (SALs)
Early Level Money	MNU 0-09a SOC 0-020a Explore the roles of local shops and services through role-play. Discussion the difference between wants and needs.	<ul style="list-style-type: none"> • can identify different roles in society • understands that people in our society need money to buy things 	SAL 8 SAL 9
First Level Money	MNU 1-09a MNU 1-09b SOC 1-20a SOC 1-21a SOC 1-22a Explore how businesses in the local community and how they meet the needs of children. Where do they shop, how do they know what they can buy with the coins they have? Invite local business people into school to answer questions. Experience the different roles, responsibilities and skills being part of different types of enterprise projects e.g. buying and selling, community improvements, Fair trade, Eco-schools, Tuck shop. Consider the budgets and costs needed to run certain Enterprise topics. Explore role-play scenarios for running businesses or different work skills and professions. Research and explore how a business or product is delivered in greater detail eg school uniform, school milk, farm, post office.	<ul style="list-style-type: none"> • has experiences of different types of jobs involved in running a business • explores ways people can make money, including running their own business 	SAL 8 SAL 9

<p>Second Level</p> <p>Money</p>	<p>MNU 2-09a MNU 2-09b MNU 2-09c SOC 2-20a SOC 2-21a SOC 2 22a</p> <p>Use Fair Trade as a theme to explore ethical trading and the consequences of unethical trading and consumerism on the economies and living conditions of other countries.</p> <p>Partnership with local banks and credit unions to explore the pros and cons of a different payments methods and practical activities related to budgeting and paying for goods and services with different methods.</p> <p>Experience different skills, responsibilities and challenges of working with money through a variety of Enterprise activities. Consider the profit, loss, and risk and start-up costs of a project. Research and write business plans to support an Enterprise project.</p> <p>Create links with local businesses to provide expert support, and provide opportunities for work placement.</p>	<ul style="list-style-type: none"> • learns how to identify different types of enterprise activity • understands that there are different ways to pay for essential goods and services such as cash, cheques, credit and can explain briefly the advantages and disadvantages of each 	<p>SAL 8 SAL 9</p>
<p>Early Level</p> <p>Time</p>	<p>MNU 0-10a SOC 0-02a SOC 0-04a SOC 0-12a</p> <p>Interview grandparents or senior citizens in the community about the past, linking together the idea of generations past present and future.</p> <p>Study artefacts such as photos, video clips, clothes and toys from different years and decades and centuries to look at differences between the past and present.</p> <p>Role-play activities to life in the past in the school or local community.</p>	<ul style="list-style-type: none"> • shows interest and understanding of things and people who can help them to find out about the past, their locality, community and their culture including their family • displays understanding that some things change over time and place and some things stay the same • explores and asks questions about artefacts which inform people about the past and present, life locally and in other places and discusses what they might tell us, their possible age or origin 	<p>SAL 4 SAL 7 SAL 2</p>

<p>First Level</p> <p>Time</p>	<p>MNU 1-10a MNU 1-10b MNU 1-10c SOC 1-02a SOC 1-03a SOC 1-04a SOC 1-06a</p> <p>Discuss key events and artefacts from History topics and order them on a timeline. Consider a calendar of events .</p> <p>Storyline topics to explore significant historical places or individuals. Using methods of joined up learning such as IDL to compare difference and similarities with the past. Why are significant people or past events remembered and how have they changed our lives?</p>	<ul style="list-style-type: none"> • gives accounts of how people, groups and past events have contributed to Scottish culture and how they are remembered and recognised by members of the local community • give accounts of the impact of individuals or groups of people on life in their own time and of how their activities have an impact on our lives today • begins to recognise that some sources of evidence are more reliable than others and can use them to discuss a familiar event. 	<p>SAL 4 SAL 7 SAL 9 SAL 2</p>
<p>Second Level</p> <p>Time</p>	<p>MNU 2-10a MNU 2-10b MNU 2-1-c SOC 2-02s SOC 2-03a SOC 2-04a SOC 2-06a</p> <p>Transport studies - changes in the use of different kinds of transport over time and think about how long journeys would take for each method.</p> <p>Create detailed timelines in a variety of ways (illustrations/ICT) to evidence significant dates, artefacts, people and events from history.</p> <p>Use a variety of primary and secondary evidence to explore history topics and show the similarities and differences between the present and past.</p> <p>Use of historical eras/periods such as Jacobites, Wars of Independence, WW2, Victorians.</p> <p>Debate the significance of historical figures and events and present informed evidence of their impact and legacy.</p> <p>Consider the changes over different centuries and decades in types of industry in Scotland and the UK.</p>	<ul style="list-style-type: none"> • explains how key people, groups and events have influenced the culture of Scotland, it's local community, environment and heritage of Scotland and Britain • demonstrates how current events and events in the past can have both immediate and long term consequences • uses primary and secondary sources to research familiar events, explaining the differences between these types of sources and if the event is from the past, placing it correctly in a chronology of events studies • provides informed accounts (with examples) of the similarities and differences between life now and life in the past or between life in Scotland and life in another area of the world 	<p>SAL 4 SAL 7 SAL 9 SAL 2</p>

Third Level Time	MNU 3-10a SOC 3-02s SOC 3-03a SOC 3-04a SOC 3-05a SOC 3-06a Conduct a river study where pupils can measure the width, depth and speed of a river. Speed can be determined by putting a float in the water over a measured distance.	<ul style="list-style-type: none"> displays understanding that some things change over time and place and some things stay the same 	SAL 4
First Level Measurement	MNU 1-11a MNU 1-11b SOC 1-12a SOC 1-12b Design weather experiments and equipment (rainfall, temperature, wind direction, wind speed, air pressure) and record findings using tables and graphs.	<ul style="list-style-type: none"> describes the effects of weather and climate on living things has a mental map of the local area and organises information from simple maps and other graphical sources such as bar charts to support a conclusion 	SAL 6 SAL 9
Second Level Measurement	MNU 2-11c MNU 2-20a MNU 2-20b SOC 2-12a Mapping – looking at different types of maps and different scales on maps. Measuring the distance on a map using scale.	<ul style="list-style-type: none"> compares and contrasts the effects of weather in Britain on people and society with those in a different area is developing and using mental maps of Scotland, Britain, Europe and the world and relates these to print and online maps 	SAL 6 SAL 9
Third Level Measurement	MNU 3-11a MNU 3-11b SOC 3-12a Measuring distances on a variety of types of maps and charts. Use of contours and isobars.	<ul style="list-style-type: none"> compares and contrasts the effects of weather in Britain on people and society with those in a different area 	SAL 9 SAL 6
Early Level Data and analysis	MNU 0-20a MNU 0-20b MNU 0-020c SOC 0-15a Explore a variety of evidence to discover the world e.g. internet, maps, books, film, globe, trips etc. Discuss the share opinions about how the evidence relates to their knowledge and understanding of a topic. Conduct basic surveys and present findings in a pictograph.	<ul style="list-style-type: none"> listens to others' views and responds with their own relevant point of view during play with others makes decisions which recognise their participation 	SAL 6 SAL 9 SAL 5

<p>First Level</p> <p>Data and analysis</p>	<p>MNU 1-20a MNU 1-20b MTH 1-21a SOC 1-15a</p> <p>Use HOTS skills to create good research questions for topics, field trips or classroom visitors.</p> <p>Use and discuss a variety of graphic information and make decisions about the relevance and reliability of the evidence.</p>	<ul style="list-style-type: none"> • and other sources to support a given point of view uses relevant numeracy skills and organises data from maps • assesses given data to support an argument about a local social, political, environmental or economic issue • demonstrates in classroom and school life key features of decision-making such as listening to points of view, supporting points with reasons, being fair about how decisions are made 	<p>SAL 6</p> <p>SAL 9</p> <p>SAL 5</p>
<p>Second Level</p> <p>Data and analysis</p>	<p>MNU 2-20a MNU 2-20b MTH 2-21a SOC 2-15a SOC 2-09a SOC 2-22a</p> <p>Traffic surveys – counting the different types of vehicles and plotting on graphs, then drawing conclusions.</p> <p>Community surveys – travel to work, shop types as part of a local area study, drawing conclusions and presenting findings.</p> <p>Political Surveys – looking at opinion poll data on tables and graphs.</p> <p>Comparing different pieces of numerical data and using this information to draw conclusions based on evidence possible use of the census data as a context looking at e.g. travel to work.</p> <p>Using weather statistics from charts and graphs, measure the impact of weather and climate between the local area and a foreign country.</p> <p>Research weather during important battles.</p> <p>Survey, record, and present information about tourism in the</p>	<ul style="list-style-type: none"> • uses relevant numeracy and ICT skills to interpret data from maps and other sources and create simple graphs • evaluates a range of data and uses it to research a social, political, environmental or economic issue • gives an account of the main features of democracy, including elections and the work of elected representatives and relates these to their own life 	<p>SAL 5</p> <p>SAL 6</p> <p>SAL 9</p>

	local area Market research of local businesses, products, and services for Enterprise activities.		
Third Level Data analysis	MNU 3-20a SOC 3-15 a SOC 16a Using data from air quality surveys to compare the quality of life of different areas and consider the consequences of different levels of particulates – this could have an international dimension. Using census data to make comparisons and draw conclusions about topics such as population change through the use of population pyramids.	<ul style="list-style-type: none"> engages with and evaluates the usefulness of a variety of primary and secondary evidence about unfamiliar events (if from the past, placing them correctly in a chronology of Scottish, British, European or world events) and uses sources to research an issue of their choice 	SAL 3
Early Level Estimation and Rounding	MNU 0-01a SOC 0-07a Ideas of bigger and smaller, more and less can be developed in a social studies context such as height of land, weather readings.	<ul style="list-style-type: none"> shows interest and understanding of things and people who can help them to find out about the past, their locality, community and their culture including their family 	SAL 1
First Level Estimation and Rounding	MNU 1-01a SOC 1-07a Learners can consider what is far and what is near in their local surroundings. Learners can consider what journeys might be longer or shorter.	<ul style="list-style-type: none"> uses relevant numeracy and ICT skills to interpret data from maps and other sources and create simple graphs 	SAL 9
Second Level Estimation and Rounding	MNU 2-01a SOC 2–13a Using data to compare countries to each other for topics such as population. Understanding that data can rounded and the implications for accuracy.	<ul style="list-style-type: none"> evaluates a range of data and uses it to research a social, political, environmental or economic issue 	SAL 3

Third Level Estimation and Rounding	MNU 3-01a MNU 3-03a SOC 3-14a Interpreting data from graphs where data is estimated, for example opinion polls. Consider the accuracy and use of that information, for example the makeup and size of the sample. Working out height from contour maps.	<ul style="list-style-type: none"> evaluates a range of data and uses it to research a social, political, environmental or economic issue 	SAL 9
Second Level Fraction, Decimal Fractions and Percentages	MNU 2-20a MNU 2-20b SOC 2-09a Use different methods to display information, including pie charts to demonstrate for example travel to work survey, or types of plants.	<ul style="list-style-type: none"> uses relevant numeracy and ICT skills to interpret data from maps and other sources and create simple graphs 	SAL 9
Third Level Fraction, Decimal Fractions and Percentages	MNU 3-20a SOC 3-12a Use of a variety of complex methods to present data collected such as percentages to create pie charts with raw data.	<ul style="list-style-type: none"> uses relevant numeracy and ICT skills to interpret data from maps and other sources and create simple graphs 	SAL 4 SAL 6 SAL 9
Second Level Number and Number processes	MNU 2-20a MNU 2-04a SOC 2-12a Ability to read climate graphs, showing rainfall and temperature, including negative temperatures. Tourism – looking at the changes in the number and destinations of tourists over time.	<ul style="list-style-type: none"> uses relevant numeracy and ICT skills to interpret data from maps and other sources and create simple graphs 	SAL 6 SAL 3
Third Level Number and Number processes	MNU 3-03a MNU 3-04a MNU 3-07a MNU 3-09b MNU 3-09c SOC 3-12a SOC 3-20a SOC 3-20b SOC 3-21a Drawing climate graphs including the use of negative numbers. Compare the economy of the UK and Scotland in the pre and	<ul style="list-style-type: none"> uses relevant numeracy and ICT skills to interpret data from maps and other sources and create simple graphs 	SAL 6 SAL 8 SAL 9

	<p>post was eras.</p> <p>Understand the definitions of LEDC and MEDCs and how the statistical measures contribute to these definitions.</p> <p>Comparison activities about the industrial output of a country</p> <p>Impact of economy on society eg GNP and GDP – discussion about these measures and how they are constructed.</p>		
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As stated above, as well as numeracy outcomes, some aspects of Social Studies particularly People and Place and Environment can also provide good contexts for Mathematics outcomes.

<p>Early Level</p> <p>Angle, symmetry and transformation</p>	<p>MTH 0-017a SOC 0-09a</p> <p>Programming and making maps with Beebots and Roamers to make journeys.</p> <p>Create simple maps of classroom/ playground.</p> <p>Play a variety of movement games related to topics where learners have to follow instructions, give instructions, and describe positions.</p>	<ul style="list-style-type: none"> looks at simple plans or maps and helps to find things in their local area 	
<p>First Level</p> <p>Angle, symmetry and transformation</p>	<p>MTH 1-17a MTH 1-18a SOC 1-14a</p> <p>Explore making maps, following maps and writing instructions for different journeys and purposes eg journeys to school or how to get to the Post Office.</p> <p>Use 4 basic compass points and basic grid references to record and locate information on maps. Develop the skills through activities related to topics such as treasure hunts or orienteering tasks.</p>	<ul style="list-style-type: none"> uses relevant numeracy skills and organises data from maps and other sources to support a given point of view 	<p>SAL 6</p>

<p>Second Level</p> <p>Angle, symmetry and transformation</p>	<p>MTH 2-17a MTH 2-17b MTH 2-17c MTH 2-17d MTH 2-18a MTH 2-19a SOC 2-14a</p> <p>Draw and create maps for different purposes that include calculations of grid coordinates and scale.</p> <p>Create a variety of maps using digital software and online mapping tools.</p> <p>Use angles and compass points to navigate routes in orienteering activities. Plot and conduct treasure hunt activities using mobile devices and GPS technologies.</p>	<ul style="list-style-type: none"> uses relevant numeracy and ICT skills to interpret data from maps and other sources and create simple graphs is developing and using mental maps of Scotland, Britain, Europe and the world and relates these to print and online maps 	<p>SAL 6</p>
<p>Third Level</p> <p>Angle, symmetry and transformation</p>	<p>MTH 3-17c MTH 3-17b SOC 3-14a</p> <p>Use of 6-figure grid references on a variety of types of maps.</p> <p>Produce several maps of the same area at different scales and decide which is most appropriate for the information being displayed.</p>	<ul style="list-style-type: none"> uses relevant numeracy and ICT skills to interpret data from maps and other sources to create simple graphs is developing and using mental maps of Scotland, Britain, Europe and the world and relates these to print and online maps 	<p>SAL 6</p>
<p>Second Level</p> <p>Data analysis</p>	<p>MTH 2-21a SOC 2-12a</p> <p>Plotting weather data recorded onto both line and bar graphs.</p>	<ul style="list-style-type: none"> uses relevant numeracy and ICT skills to interpret data from maps and other sources to create simple graphs 	<p>SAL 6</p>
<p>Third Level</p> <p>Measurement</p>	<p>MTH 3-21a SOC 3-12a</p> <p>Climate comparison using numerical data on temperature and rainfall and the plotting of these on a climate graph.</p>	<ul style="list-style-type: none"> uses relevant numeracy and ICT skills to interpret data from maps and other sources to create simple graphs 	<p>SAL 6</p>

Web links

Social Studies experiences and outcomes

<http://www.educationscotland.gov.uk/learningandteaching/curriculumareas/socialstudies/eandos/index.asp>

Social Studies Assessing Progress and Achievement

<http://www.educationscotland.gov.uk/learningandteaching/assessment/progressandachievement/professionallearningresource/curriculum/socialstudies/progress.asp>

National Numeracy Progression Framework

<http://www.educationscotland.gov.uk/resources/n/nationalnumeracyprogressionframework/index.asp?strReferringChannel=educationscotland&strReferringPageID=tcm:4-615801-64>

Numeracy and Mathematics experiences and outcomes

<http://www.educationscotland.gov.uk/learningandteaching/curriculumareas/mathematics/eandos/index.asp>