National Curriculum Links

Links to the National Curriculum in England

# Chapter 4: Key processes in mathematical reasoning

The national curriculum for mathematics aims to ensure that all pupils:

* **reason mathematically** by following a line of enquiry, conjecturing relationships and generalizations, and developing an argument, justification or proof using mathematical language

Links to Curriculum for Excellence in Numeracy and Mathematics in Scotland

# Chapter 4: Key processes in mathematical reasoning

## Numeracy and mathematical skills

As learners progress through Curriculum for Excellence levels, they should demonstrate increasing sophistication and independence in their ability to demonstrate, link, transfer and apply the following skills in a range of increasingly more challenging contexts:

* interpret questions
* select and communicate processes and solutions
* justify choice of strategy used
* link mathematical concepts
* use mathematical vocabulary and notation
* use mental agility
* reason algebraically
* determine the reasonableness of a solution

Links to Curriculum for Wales: Programme of Study for Mathematics, Key Stages 2–4

# Chapter 4: Key processes in mathematical reasoning

Learners should be taught to:

## Foundation Phase

* use checking strategies to decide if answers are reasonable
* interpret answers within the context of the problem and consider whether answers are sensible
* interpret information presented in charts and diagrams and draw appropriate conclusions

## Key Stages 2–4

* select from an increasing range of checking strategies to decide if answers are reasonable
* interpret answers within the context of the problem and consider whether answers, including calculator, analogue and digital displays, are sensible
* draw conclusions from data and recognize that some conclusions may be misleading or uncertain

Australian Curriculum for Mathematics

This maps entries in the **Australian Mathematics Curriculum (from Foundation Stage to Year 7)** to the content of chapters of Haylock, *Mathematics Explained for Primary Teachers*, 6th edition.

# Chapter 4: Key processes in mathematical reasoning

## Proficiency strand: reasoning

Students develop an increasingly sophisticated capacity for logical thought and actions, such as analysing, proving, evaluating, explaining, inferring, justifying and generalizing. Students are reasoning mathematically when they explain their thinking, when they deduce and justify strategies used and conclusions reached, when they adapt the known to the unknown, when they transfer learning from one context to another, when they prove that something is true or false and when they compare and contrast related ideas and explain their choices.