Explore the ideas that drive the program

Stepping Stones Structure

The expert team of authors and consultants at ORIGO Education utilised all available educational research to create *ORIGO Stepping Stones*, a revolutionary primary mathematics program. The scope and sequence of learning experiences was carefully designed to promote deep understanding of mathematical concepts and fluency of skills. Mathematics contains many concepts and skills that are closely interconnected. A good curriculum will carefully build the structure so that all of the pre-requisite topics are in place before the next topics are connected.

In *Stepping Stones* the key ideas and skills of these topics have been identified and placed in smaller blocks (modules) over time. In the actual lessons, work is included to master what is taught alongside the other content development. When students come to a new topic, it can be easily connected.

Although practice is an essential component of any mathematics curriculum, *Stepping Stones* requires less practice time as key ideas are revisited during the course of everyday lessons throughout the year.

See Topic Overview Charts for detailed information on *Stepping Stones* spaced-learning structure.

Stepping Stones Teaching Approach

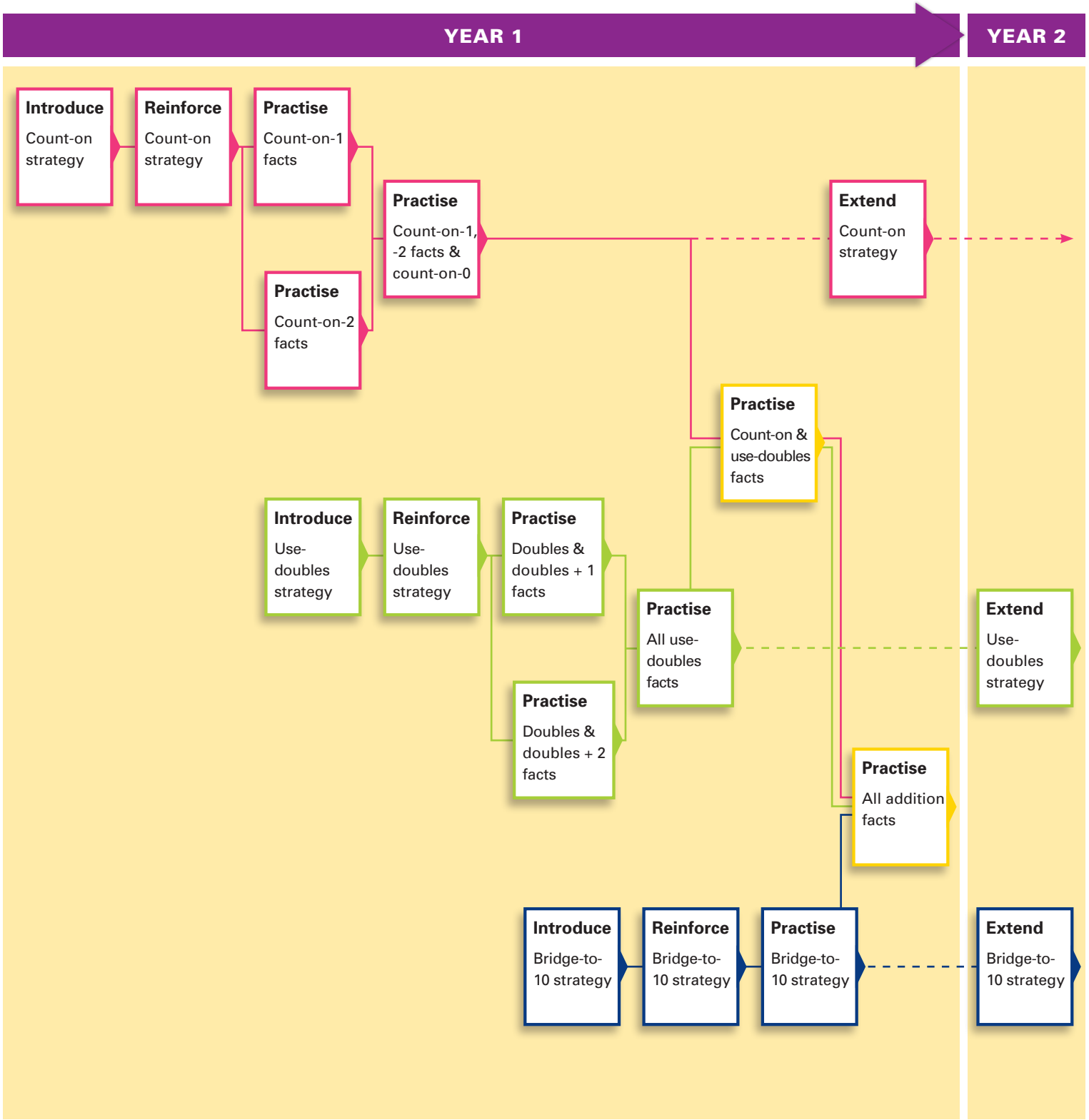
Generally there are two content strands presented in a *Stepping Stones* module. The work for the content within the module focuses on the key concepts or skills that are **introduced**, **reinforced**, and to some extent **practised**. Additional work to cement these concepts occurs during ongoing practice until the concepts/skills are used to build the next part of the structure. The work cycles through again to **extend** the use of the concept/skill or to introduce another concept/skill.

In the first stage, students are introduced to the concept or skill using contextual situations, concrete materials, and pictorial representations to help students make sense of the mathematics. In the second stage, the concept or skill is reinforced through games or activities. This stage provides the opportunity to understand the concepts and skills as it serves to connect the concrete and pictorial models of the introductory stage to the symbols of the practise stage.

Once students are confident with the concept or skill, they move to the third stage where visual models are no longer used. This stage develops accuracy and speed of recall. Written and oral activities are used to practise the skill to develop fluency. Finally, as the name suggests, students extend their understanding of the concept or skill in the last stage. For example, the use-tens thinking strategy for multiplication can be extended beyond the number fact range to include computation with greater whole numbers and eventually to decimal fractions.

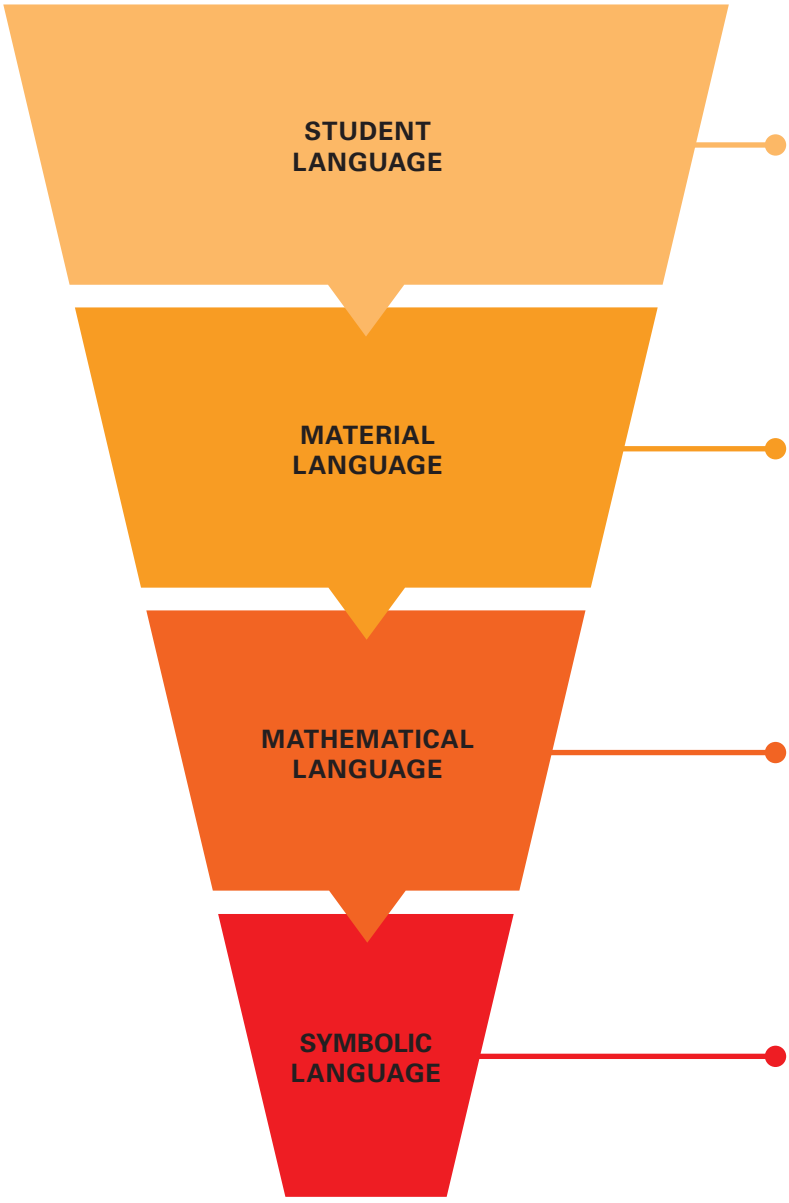
Stepping Stones Teaching Approach

This chart shows how the addition strategies for the basic facts are organised into a careful sequence that allows for development of understanding and mastery of skills over time.



Stepping Stones Language Approach

Stepping Stones was written on the premise that language is the tool that learners use to connect new ideas to existing ideas. Therefore, it is essential in helping students build an understanding of mathematical concepts. Young students need an understanding of mathematical concepts that involve more than just the symbolic notation that is used to record them.



Student Language Stage
In the first stage, children are encouraged to use their own natural language to describe the concepts. For example, students may use the words, 'eat', 'break', 'jump away', 'swim away' or 'spend' to describe situations involving subtraction. Teachers should demonstrate this language and use real-world stories and illustrations to stimulate the use of this rich and meaningful language.

Material Language Stage
The students' language broadens as they begin to act out stories and problems using classroom resources. This stage includes language that is unique to the resources being used. For example, new language such as 'cover up' or 'take away' may be introduced when acting out subtraction stories with concrete, hands-on resources. Similarly, if pictures are being used, the students may say 'cross out' or 'rub out' in the context of subtraction.

Mathematical Language Stage
At this stage students begin to exhibit mathematical precision in their language. For example, in the context of subtraction, students will use the term 'subtract' and eventually 'minus'. In reference to two-dimensional shapes they will start to say 'vertex' to describe what they may have once called a 'pointy corner'. The language at this stage is often considered to be unique to mathematics.

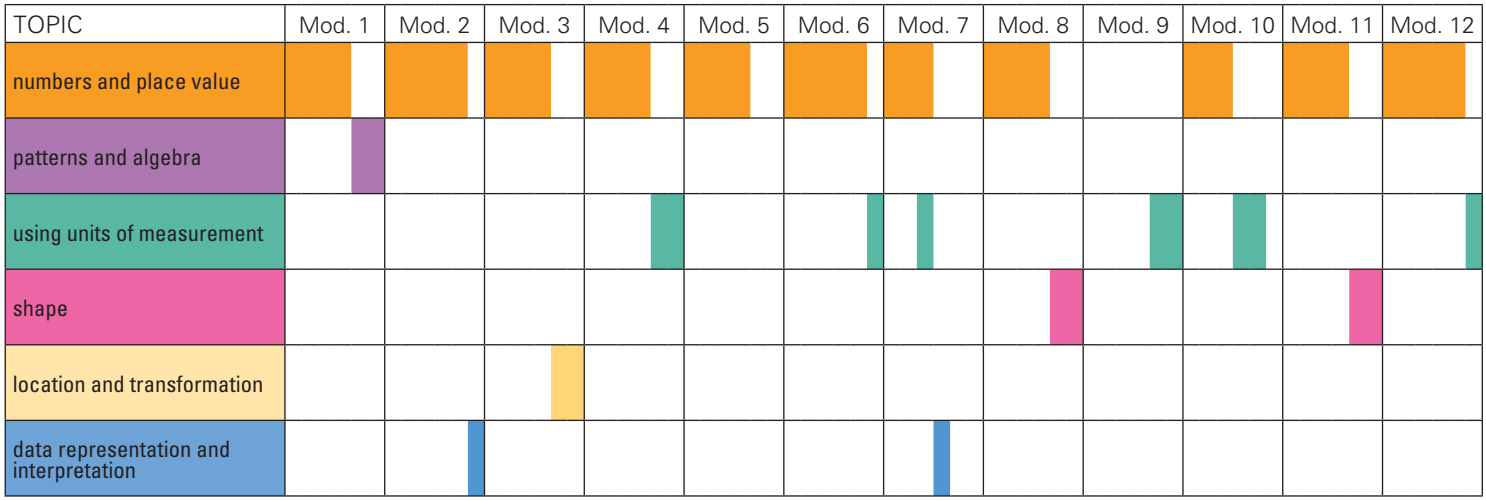
Symbolic Language Stage
In the final stage, students are introduced to the symbols or notation of that concept. Therefore, with subtraction, they learn that the minus symbol is an abbreviation for all the language of the previous stages.

Students don't simply move through the stages. Rather, they begin by using their own natural language. Then, as the stories are acted out in the classroom, students add to their language and mental picture of the concept. Then more mathematical and finally symbolic language is added to build a bigger and more comprehensive understanding of the concept.

Stepping Stones Structure – Topic Overview

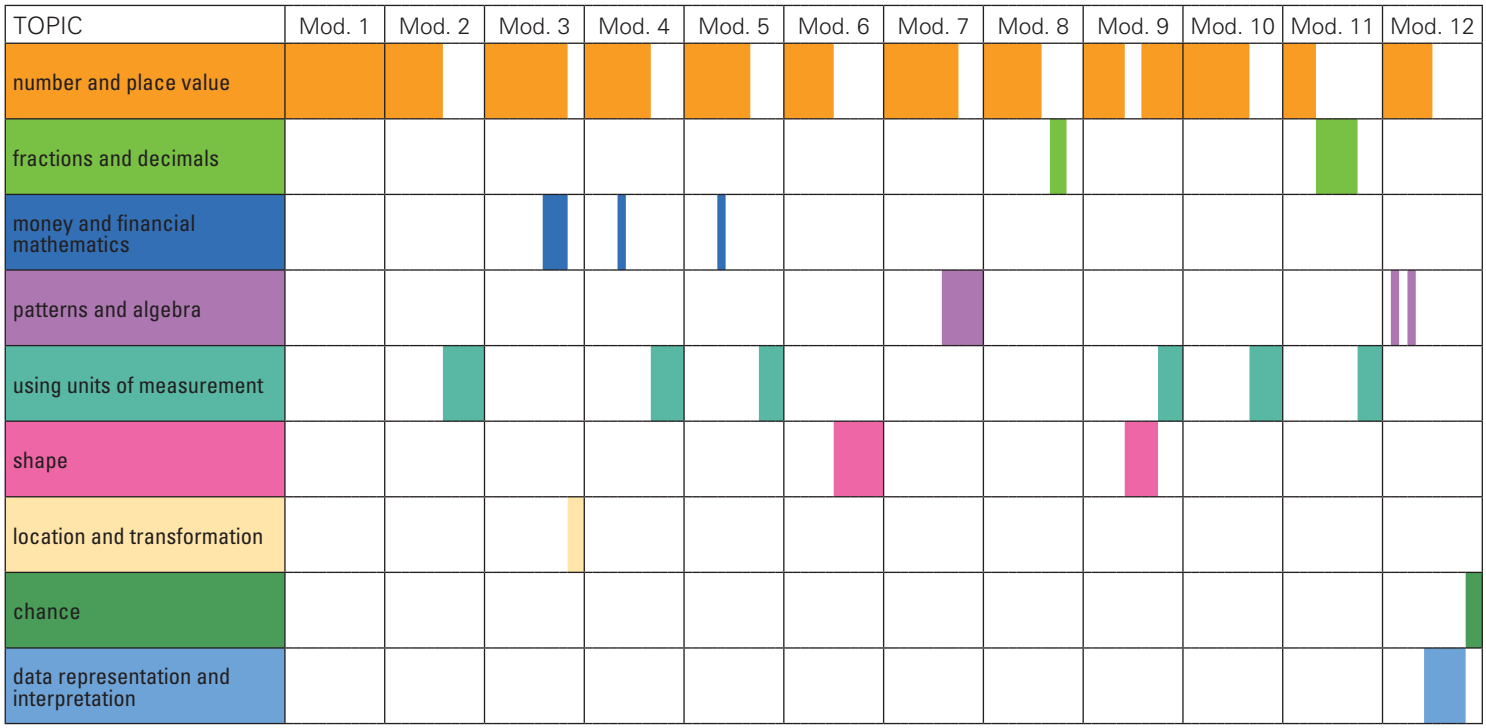
The charts below visually outline the spaced-learning approach used in *Stepping Stones*.
Each of the 12 module blocks is further divided into 12 individual lessons*.

Year F

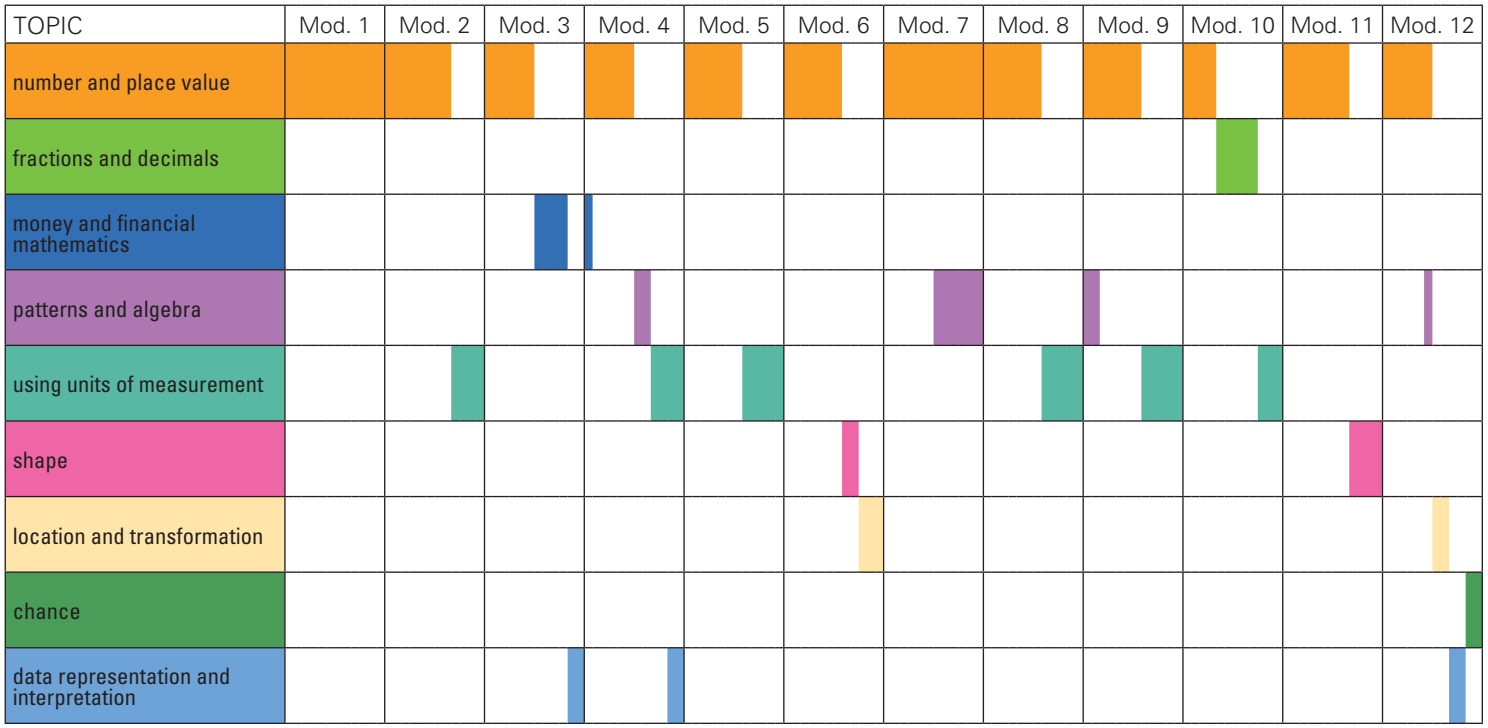


* Each module is divided into 6 individual lessons in Year F.

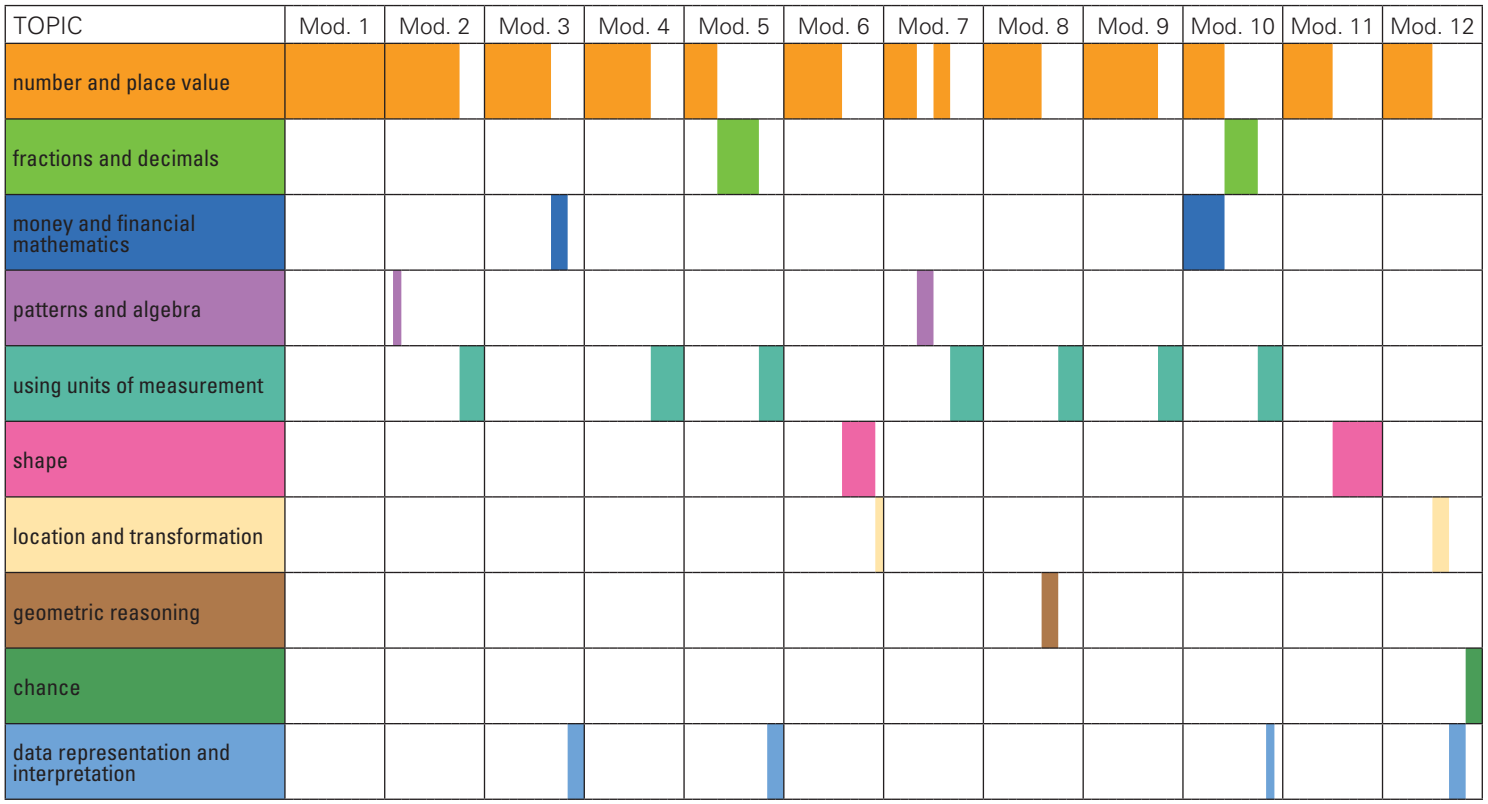
Year 1



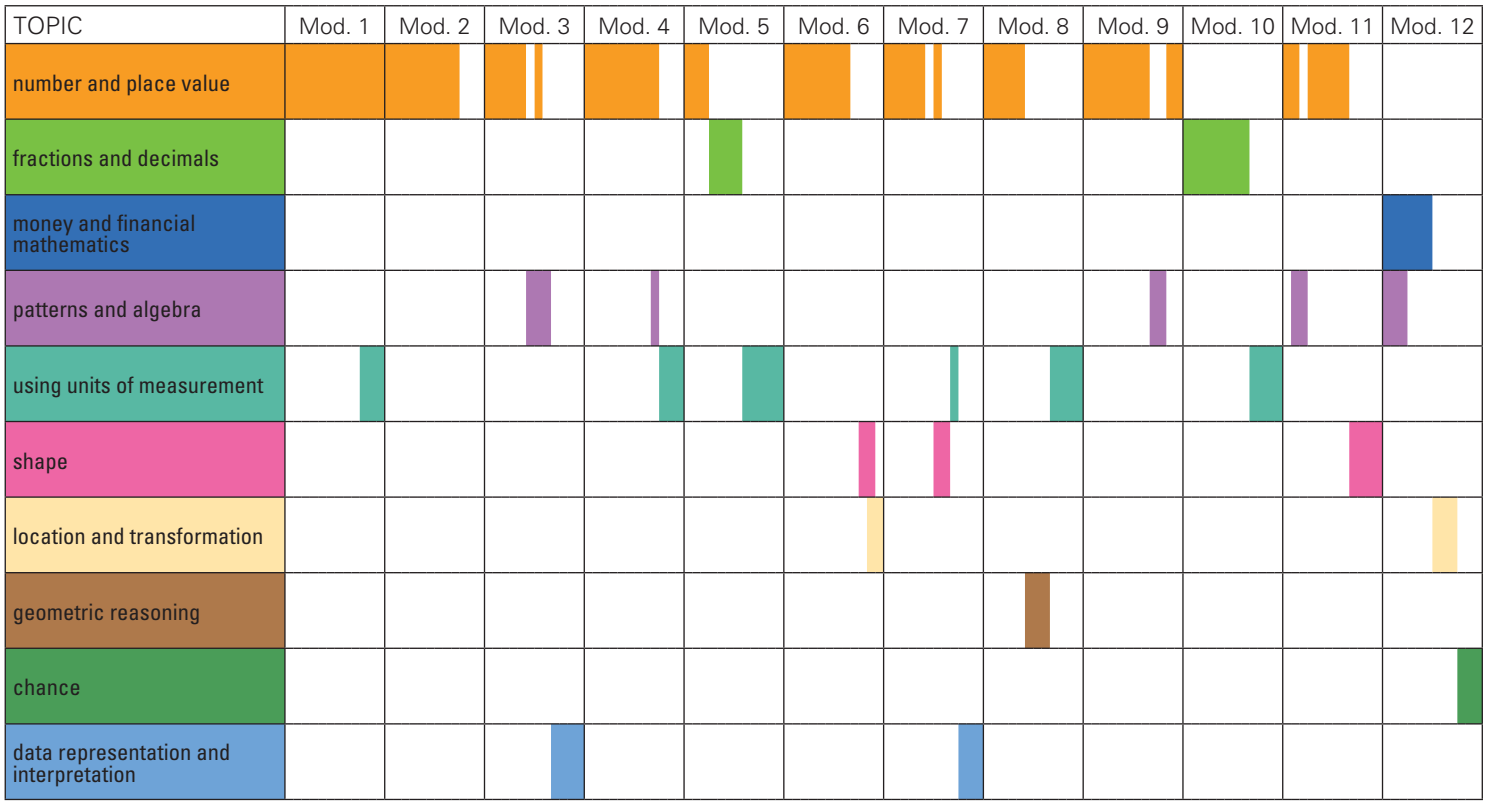
Year 2


TOPIC
Mod. 1
Mod. 2
Mod. 3
Mod. 4
Mod. 5
Mod. 6
Mod. 7
Mod. 8
Mod. 9
Mod. 10
Mod. 11
Mod. 12
number and place value
fractions and decimals
money and financial mathematics
patterns and algebra
using units of measurement
shape
location and transformation
chance
data representation and interpretation

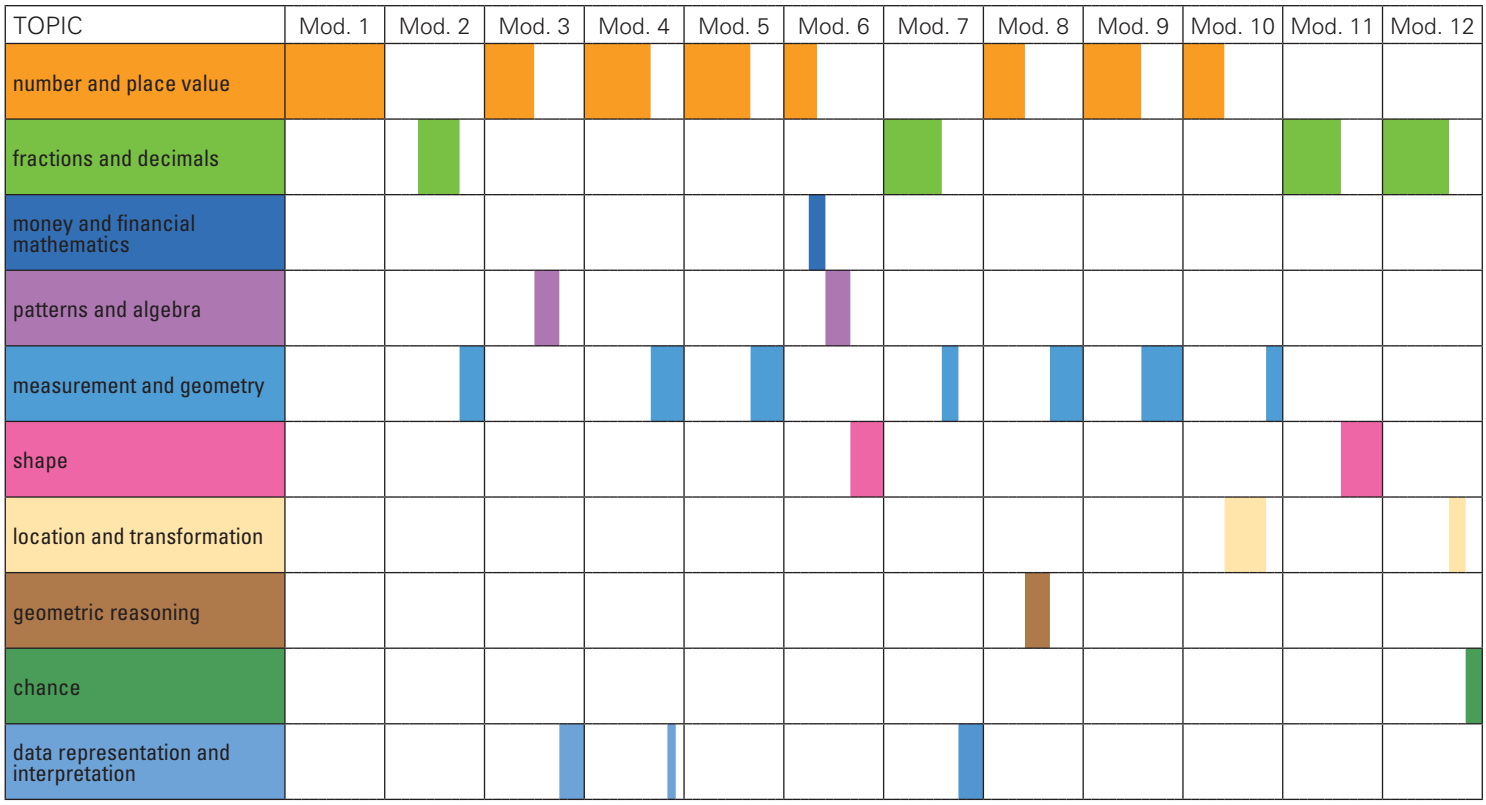
Year 3


TOPIC
Mod. 1
Mod. 2
Mod. 3
Mod. 4
Mod. 5
Mod. 6
Mod. 7
Mod. 8
Mod. 9
Mod. 10
Mod. 11
Mod. 12
number and place value
fractions and decimals
money and financial mathematics
patterns and algebra
using units of measurement
shape
location and transformation
geometric reasoning
chance
data representation and interpretation

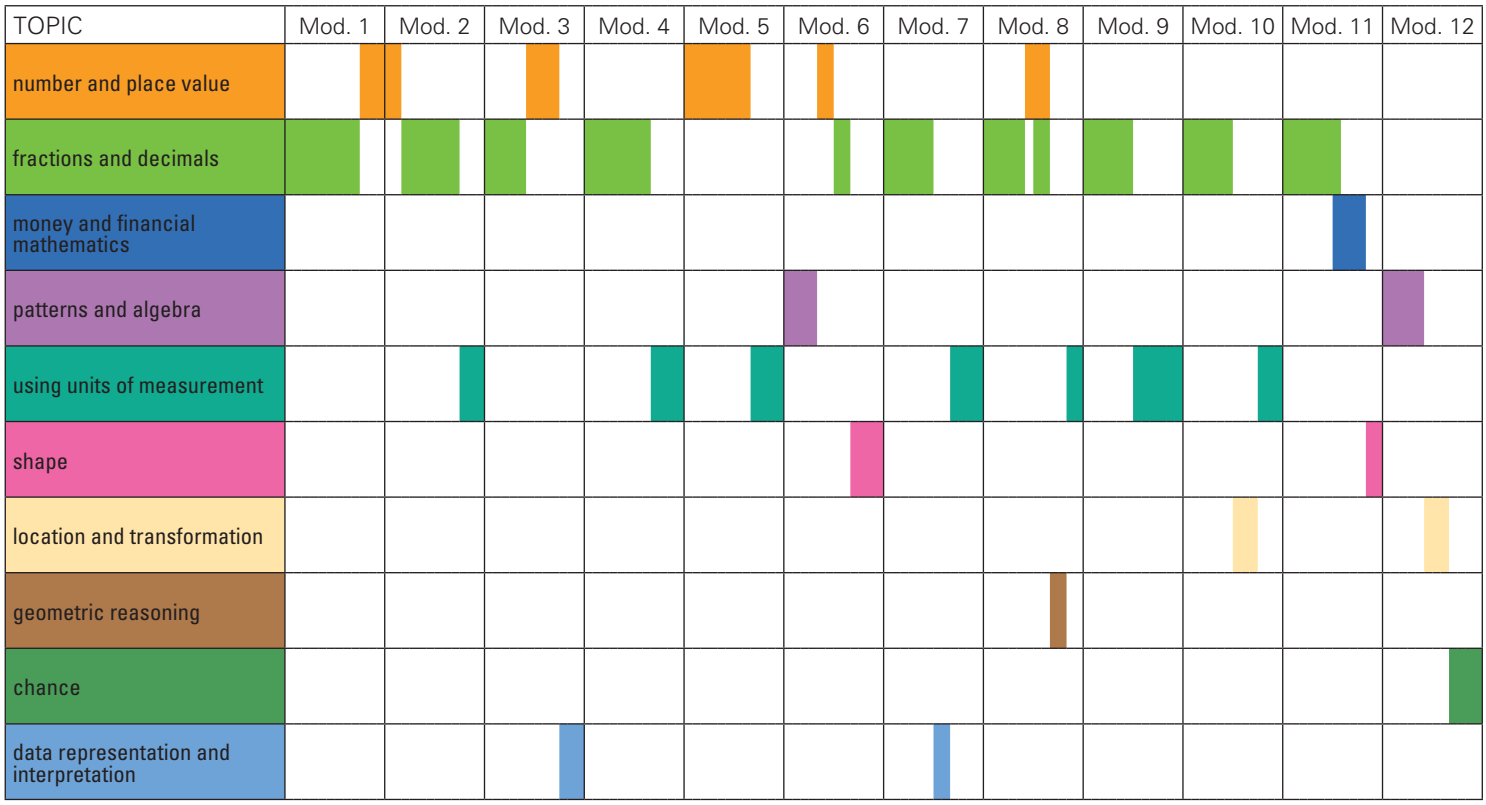
Year 4


TOPIC
Mod. 1
Mod. 2
Mod. 3
Mod. 4
Mod. 5
Mod. 6
Mod. 7
Mod. 8
Mod. 9
Mod. 10
Mod. 11
Mod. 12
number and place value
fractions and decimals
money and financial mathematics
patterns and algebra
using units of measurement
shape
location and transformation
geometric reasoning
chance
data representation and interpretation

Year 5


TOPIC
Mod. 1
Mod. 2
Mod. 3
Mod. 4
Mod. 5
Mod. 6
Mod. 7
Mod. 8
Mod. 9
Mod. 10
Mod. 11
Mod. 12
number and place value
fractions and decimals
money and financial mathematics
patterns and algebra
measurement and geometry
shape
location and transformation
geometric reasoning
chance
data representation and interpretation

Year 6


TOPIC
Mod. 1
Mod. 2
Mod. 3
Mod. 4
Mod. 5
Mod. 6
Mod. 7
Mod. 8
Mod. 9
Mod. 10
Mod. 11
Mod. 12
number and place value
fractions and decimals
money and financial mathematics
patterns and algebra
using units of measurement
shape
location and transformation
geometric reasoning
chance
data representation and interpretation