Reception Mathematical Development – Long Term Plan **Age Related Expectations - Autumn**

Mathematical Language ** including Shape, Space & Measure*	**Number Pattern** (including pre-counting skills) **Comparisons and Relationships** ** including Shape, Space & Measure* ↔	**Number:** **Counting & Calculating Skills**	**Number Recognition** **Mark Making / Number Formation**
Children are taught to: ▪ Recite numbers to 10 ▪ Begin to recite numbers backwards from 10 ▪ Begin to break the counting chain (not always starting from 1 (f/wards) / 10 (b/wards) ▪ Begin to talk about position of numerals/numbers *e.g. 5 comes after 4* ▪ Use number names to 5 accurately in play ▪ Begin to compare quantities using the language of □ 'more than' and 'less than', 'fewer □ 'same as' □ 'equal to', within a full sentence, to compare two sets of objects *e.g. There are more cats than dogs.* ▪ Say the number that is one more than a given number up to 5, using a sentence *e.g. 3 is 1 more than 2* ▪ Begin to say the number that is one less than a given number within 5 ▪ Begin to use the word 'estimate' ▪ Begin to use the vocabulary involved in addition, within practical activities and discussion *e.g. and, add, more, altogether, makes* ▪ Begin to use the vocabulary involved in subtraction, within practical activities and discussion *e.g. take (away), leave, left, less, makes, altogether* ▪ Begin to use some language of sharing, doubling, halving and sharing *e.g. share, the same number for everyone, double/half, the same number for both* ▪ Respond to and use language of position and direction ▪ Begin to use mathematical language in number formation *e.g. 5 – straight, straight, curve* ▪ Begin to describe everyday objects and shapes using mathematical language ▪ Begin to use everyday language to talk about / compare quantities and objects and to solve problems related to: size; weight; capacity; position; distance; time; and money **Also see linked vocabulary overview.*	Children are taught to: ▪ Explore patterns □ Recognise a pattern within the environment / daily routine / story *e.g. clothing, toys, wrapping paper* □ Create a pattern *e.g. ABAB moving onto ABBABB* □ Use a mirror to see a symmetrical pattern ▪ Describe a pattern □ Talk about what is the same or different about patterns □ Begin to use a variety of positional vocabulary e.g. next, before, after, in between ▪ Separate (partition) a group of up to 5 objects in different ways, beginning to recognise that the total is still the same *e.g. using variety of resources, numicon, bead strings ...* ▪ Begin to recognise up to 5 objects in a group not having to count **(SUBITISING),** with fast recognition of up to 3-4 objects ▪ Begin to estimate how many objects (up to 5) they can see, and then check by counting them ▪ Begin to explore number bonds to 5 ▪ Combine shapes together to make news shapes and takes shapes apart (composition and decomposition ▪ Use shapes to build models/make pictorial representations ▪ Recognise shapes within the environment ▪ Recognise and begin to name some common 2D and 3D shapes, including □ Rectangles (including squares), circles, triangles, ovals □ Cuboids (including cubes), pyramids and spheres, cones, cylinders ▪ Begin to □ order two or three items by: length; height; weight; and capacity Begin to □ order and sequence familiar events □ measure short periods of time *e.g. using sand timer* □ become familiar with a clock face and hands	Children are taught to: ▪ Join in with nursery rhymes familiar and new, using objects /fingers to represent quantity ▪ 'Tag' saying one number for each item **(ONE TO ONE PRINCIPLE)** □ Recognise that the last number said represents the total counted so far **(CARDINAL PRINCIPLE)** ▪ Count out up to 5 objects accurately □ from a larger group within a range of contexts **(ONE TO ONE PRINCIPLE)** □ in an irregular arrangement □ as actions or objects that cannot be moved ▪ Understand and use the words *'first' / 'last'* **(ORDINAL NUMBERS)** ▪ Understand that it doesn't matter where the counting starts as long as things are only counted once **(ORDER-IRRELEVANCE PRINCIPLE)** ▪ Begin to count on, starting at any point **(BREAKABLE CHAIN)** ▪ Use an increasing range of mathematical resources (manipulatives) for counting *e.g. abacus, numicon, flip flaps, five or ten frames, number track to 5 or 10* ▪ Find one more / one less from a group of up to 5 objects ▪ Use a range of manipulatives to show more/less than a given number *e.g. ten frames, bead strings, number track* ▪ Find the total number of items in two groups (up to 5) by counting all of them together **(AGGREGATION STRUCTURE)** ▪ Begin to find the total number in a group by taking away (subtraction) within 5 **(PARTITIONING STRUCTURE)** ▪ Begin to share, double and halve up to 5, using a range of manipulatives	Children are taught to: ▪ Recognise some numbers of personal significance *e.g. own age, age of siblings, birth date* ▪ Recognise numerals 0 to 5 in a range of contexts / fonts ▪ Link numeral with amounts to 5. Select the correct numeral to represent 0 to 5 objects ▪ Compare the value of numerals 0-5 in context. Order and discuss their position e.g. *5 comes after 4, 3 comes before 4* ▪ Begin to represent numbers using marks/symbols/pictures, developing one to one correspondence ▪ Begin to record quantities with support *e.g. tallying, dots, numeral cards* ▪ Begin to write and record numbers/numerals 0 – 5 in a range of contexts *(using correct formation)* ▪ Begin to recognise / understand addition, subtraction and equal symbols

OUTCOMES: Emerging Reception
Development Matters 2020

□ Practitioners observing children as they engage in a range of learning experiences.
□ Assessment judgements to be made on what children can do independently within a range of contexts

Reception Mathematical Development – Long Term Plan

Age Related Expectations – Spring

Mathematical Language ** including Shape, Space & Measure*	**Number Pattern** (including pre-counting skills) **Comparisons and Relationships** ** including Shape, Space & Measure*	**Number:** **Counting & Calculating Skills**	**Number Recognition** **Mark Making / Number Formation**
Children are taught to: ▪ Begin to recite numbers in order to 20 ▪ Recite number backwards from 10 and begin to recite numbers backwards from 15 ▪ Break the counting chain (not always starting from 1 (f/wards) / 10 (b/wards) ▪ Talk about position of numerals/numbers up to 5 and begin to talk about position of numerals up to 10 *e.g. 6 comes after 5, 4 comes before 5* ▪ Use number names up to 10 accurately within play. ▪ Compare quantities using the language of □ 'more than' and 'less than', 'fewer □ 'same as' □ 'equal to', within a full sentence, to compare two sets of objects *e.g. 'This jug has less water in that that one.'* ▪ Say the number that is one more and one less than a given number 10, using a sentence *e.g. 6 is 1 less than 7* ▪ Use the word 'estimate' ▪ Use the vocabulary involved in addition with increased confidence, within practical activities and discussion *e.g. and, add, more, altogether, makes, sum, equals* ▪ Use the vocabulary involved in subtraction with increased confidence, within practical activities and discussion *e.g. take (away), leave, left, less, makes, altogether, sum, equals* ▪ Use some language of sharing, doubling, halving and sharing *e.g. share, the same number for everyone, double/halve the same number for both* ▪ Use spatial language including relative terms depending on view point ▪ Use mathematical language in number formation *e.g. 5 – straight, straight, curve* ▪ Describe everyday objects and shapes using mathematical language ▪ Begin to compare shapes using mathematical language ▪ Use everyday language to talk about / compare quantities and objects and to solve problems related to: size; weight; capacity; position; distance; time; and money **Also see linked vocabulary overview.*	Children are taught to: ▪ Begin to separate (partition) a group of up to 10 objects in different ways, recognising that the total is still the same *e.g. using numicon, bead strings, 10 frames* ▪ Explore the composition of numbers 5-10 ▪ Speedily recognise of up to 5 objects in groups, not having to count **(SUBITISING)** ▪ Estimate how many objects (up to 10) they can see and then check by counting them ▪ Recall number bonds up to 5, including double facts ▪ Begin to apply their knowledge of number bonds to 5 within practical problem solving ▪ Show an interest in number problems *e.g. The answer is 8. What could the question be?* ▪ Identify own mathematical problems based on own interests / needs *e.g. I want to share the blocks between 3 children* ▪ Continue to explore patterns □ Begin to identify when a pattern is symmetrical □ Create a more complex pattern *e.g. ABBABB moving on to ABBCABBC* □ Begin to create a symmetrical pattern ▪ Describe a pattern □ Talk about what is the same or different about patterns □ Begin to explain the rule or sequence of a pattern □ Use a variety of positional vocabulary *e.g. next, before, after, in between* ▪ Use shapes confidently to build models/make pictorial representations, manipulating objects to make them fit and begin to predict an visualise how they will look ▪ Recognise all and name some common 2D and 3D shapes □ Rectangles (including squares), circles, triangles, ovals □ Cuboids (including cubes), pyramids and spheres, cones, cylinders ▪ Explore the composition and decomposition of shapes within practical activities ▪ Order two or three items by: length; height; weight; and capacity ▪ Begin to use some non-standard measures to compare items: lengths; height; weight; and capacity ▪ Order and sequence familiar events □ Become familiar with a clock face and hands □ Measure short periods of time *e.g. using sand timer and stop watch*	Children are taught to: ▪ Join in with nursery rhymes familiar and new, using objects /fingers to represent quantity ▪ Counts out up to 10 objects accurately □ from a larger group within a range of contexts **(ONE TO ONE PRINCIPLE)** □ in an irregular arrangement □ as actions or objects that cannot be moved □ as actions or objects that cannot be moved □ with non-physical things 10 *e.g. imaginary objects* **(ABSTRACTION PRINCIPLE)** ▪ Understand that it doesn't matter where the counting starts as long as things are only counted once **(ORDER - IRRELEVANCE PRINCIPLE)** ▪ Use and understand the words *first / second / last* to describe position ▪ Count on, starting at any point 0-10 **(BREAKABLE CHAIN / AUGUMENTATION STRUCTURE)** ▪ Count backwards, starting at any point 10 **(BI – DIRECTIONAL CHAIN)** ▪ Use an increasing range of mathematical resources (manipulatives) for counting *e.g. bead strings, number track to 10 or 20, number line to 10 or 20* ▪ Find one more/less from a group of up to 10 objects, show using a range of resources *e.g. number track, number fan* ▪ Find the total number of items (up to 10) in two groups by counting all of them together, using a range of manipulatives **(AGGREGATION STRUCTURE)** ▪ Find the total number in a group (up to 10) by taking away / subtraction **(PARTITIONING STRUCTURE)** ▪ Share, double and halve up to 10 objects, using a range of manipulatives	Children are taught to: ▪ Recognise and talk about numbers of personal significance *e.g. own age, age of siblings, birth date* ▪ Recognise numerals 0 to 10 in a range of contexts / fonts ▪ Compares the value of numerals 0-10 in context ▪ Order numbers 0 to 10 and discuss their position e.g. *5 comes before 6, 8 comes after 7* **(ORDINAL NUMBERS)** ▪ Link numeral with amounts to 10. Select the correct numeral to represent 0 to 10 objects ▪ Represent numbers using marks/symbols/pictures, developing one to one correspondence ▪ Record quantities in a range of contexts *e.g. tallying, dots, numeral cards* ▪ Write and record numbers/numerals 0 – 10 in a range of contexts *(using correct formation)* ▪ Recognise/understand addition, subtraction and equal symbols ▪ Begin to understand some simple number sentences using some correct symbols/numerals, within practical activities *e.g. when modelled by an adult*

OUTCOMES: Developing Reception

Development Matters 2020

□ Practitioners observing children as they engage in a range of learning experiences.

□ Assessment judgements to be made on what children can do independently within a range of contexts

Reception Mathematical Development – Long Term Plan

Age Related Expectations - Summer

Mathematical Language ** including Shape, Space & Measure*	**Number Pattern** (including pre-counting skills) **Comparisons and Relationships** ** including Shape, Space & Measure* ⟷	**Number:** **Counting & Calculating Skills**	**Number Recognition** **Mark Making / Number Formation**
Children are taught to: ▪ Recite numbers in order to 20, forwards and backwards, breaking the counting chain ▪ Begin to count beyond 20, recognising the pattern of the counting *system (e.g. pausing at each multiple of 10 to remember the structure)* ▪ Say the number which is 1 more/less than a given number (1 to 20) ▪ Begin to count in 2s/5s/10s ▪ Begin to recall some double facts *e.g. 2 + 2* ▪ Confidently compare quantities using the language of □ 'more than' and 'less than', 'fewer □ 'same as' □ 'equal to', within a full sentence, to compare two sets of objects *e.g. 'This set is equal to that one.'* ▪ Confidently use vocabulary involved in addition and subtraction, within practical activities and discussion. ▪ Answer a variety of addition and subtraction questions using mathematical language, within a practical context *e.g. What is the difference between … and …?* ▪ Begin to pose own questions using mathematical language of addition and subtraction ▪ Confidently use vocabulary involved in doubling, halving and sharing, within practical activities and discussion *e.g. the same, both, equal, double, twice, half, halves, pair, left over* ▪ Be able to express maths in sentences, using correct vocabulary ▪ Compare shapes using mathematical language *e.g. This shape has more sides. / This shape is longer.* ▪ Confidently use everyday language to talk about / compare quantities and objects and to solve problems related to: size; weight; capacity; position; distance; time; and money **Also see linked vocabulary overview.*	Children are taught to: ▪ Confidently separate (partition) a group of up to 10 objects in different ways, recognising that the total is still the same *e.g. using numicon, bead strings, 10 frames* ▪ Confidently/speedily recognise up to 5 objects in groups, not having to count **(SUBITISING)** ▪ Automatically recall number bonds to 5 and some to 10, including double facts ▪ Begin to apply their knowledge of number bonds to 10 within practical problem solving ▪ Begin to explore patterns within numbers e.g. even and odd numbers ▪ Estimate how many objects (up to 10) they can see, with increasing accuracy, and then check by counting them ▪ Use a range of manipulatives to show doubling, halving and sharing up to 10 (i.e. 'distributing equally') ▪ Begin to explore and discuss number patterns beyond 20 *e.g. using a hundred square* ▪ Continue to explore patterns □ Identify when a pattern is symmetrical □ Create more complex patterns and symmetrical patterns ▪ Describe a pattern: □ Explain the rule or sequence of a pattern □ Begin to use vocabulary such as middle, above, below ▪ Continue to explore and talk about shapes □ compose and decompose shapes in practical activities □ selecting /sorting shapes with specific properties □ begin to plan to make a shape model/picture, selecting blocks needed and visualising what they will build ▪ Confidently recognise all and name most common 2D and 3D shapes □ Rectangles (including squares), circles, triangles, ovals, semi-circle □ Cuboids (including cubes), pyramids and spheres, cones, cylinders ▪ Order three or more items by: length; height; weight; and capacity ▪ Use non-standard measures to compare items: lengths; height; weight; and capacity. ▪ Order and sequence familiar events, using words such as first, then, after, before, next, sooner, later ▪ Measure and compare short periods of time in a variety of ways	Children are taught to: ▪ Join in with nursery rhymes familiar and new, using objects /fingers to represent quantity ▪ Count up to 10 objects reliably, confidently and accurately □ from a larger group **(ONE TO ONE PRINCIPLE)** □ within a range of contexts □ in an irregular arrangement of up to 6 objects □ as actions or objects that cannot be moved □ with non-physical things 10 *e.g. imaginary objects* **(ABSTRACTION PRINCIPLE)** □ forwards and backwards starting at any point **(BI-DIRECTIONAL CHAIN)** ▪ Use and understand the words first / second / third / last to describe position ▪ Begin to use manipulatives to show teen numbers *e.g. numicon, ten frames (x 2), number fans* ▪ Use quantities/objects to add and subtract numbers (up to a total of 10) and count on or back to find the answer, *e.g. using a number track* ▪ Solve problems, including doubling, halving and sharing (up to a total of 10) *e.g. Double the number of snack items / halve the number of blocks in the basket*	Children are taught to: ▪ Recognise more numbers of personal significance *e.g. house/flat number, own age, age of siblings, birth date* ▪ Confidently recognise numerals 0 to 10 in a range of contexts / fonts ▪ Confidently link numeral to amounts and orders numbers 0 to 10 and discuss their position e.g. *5 comes before 6, 8 comes after 7* **(ORDINAL NUMBERS)** ▪ Confidently select the correct numeral to represent 1 to 10 objects ▪ Recognise/understand addition, subtraction and equal symbols ▪ Confidently record quantities in a range of contexts *e.g. tallying, numbers …* ▪ Write and record numerals/numbers 0 – 10 in a range of contexts (consistently using correct formation) ▪ Begin to record some simple number sentences using some correct symbols within practical activities *(e.g. using numeral cards / wooden or magnetic numbers)*

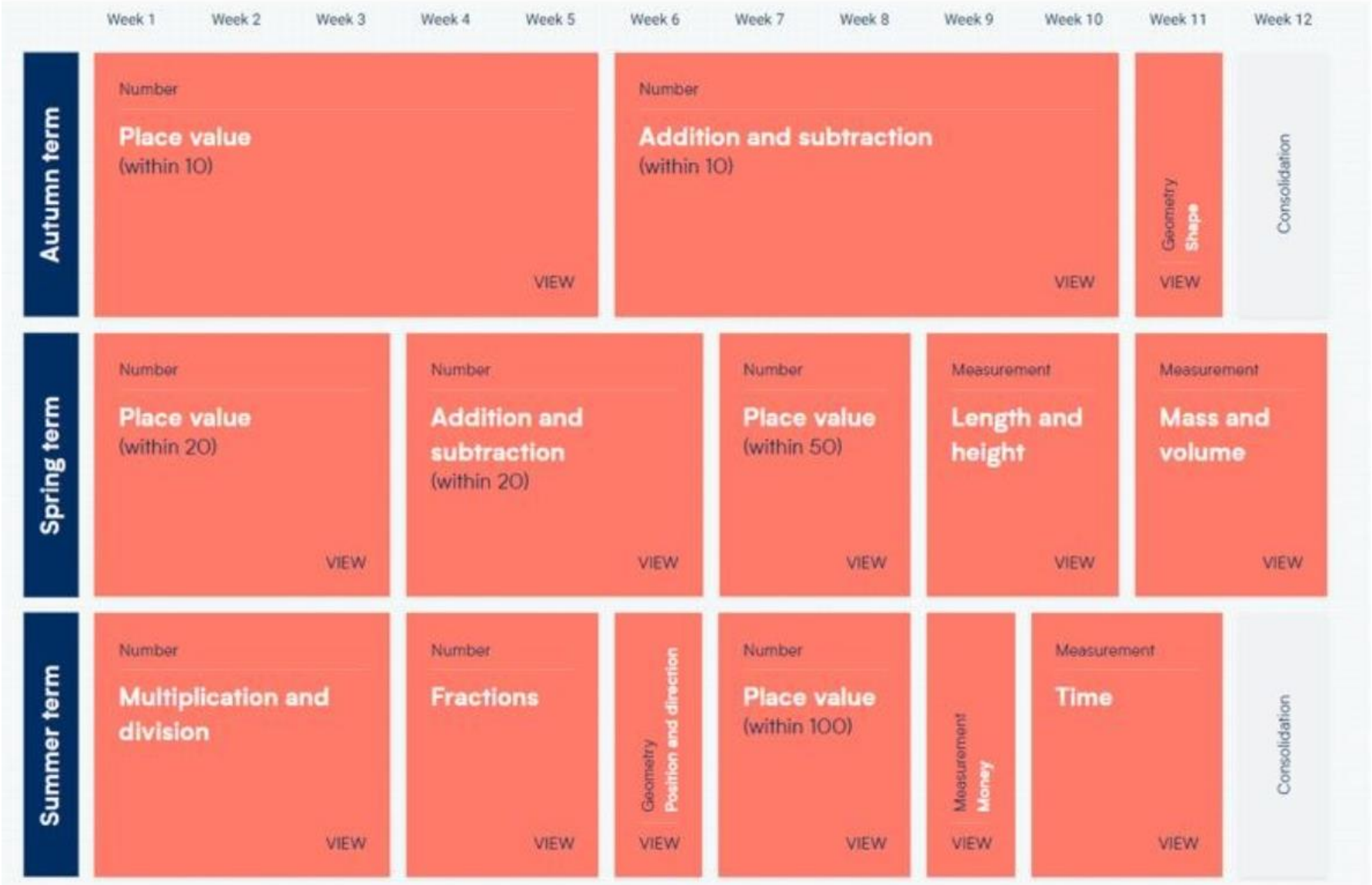
OUTCOMES: Secure Reception / ELGs

Development Matters 2020

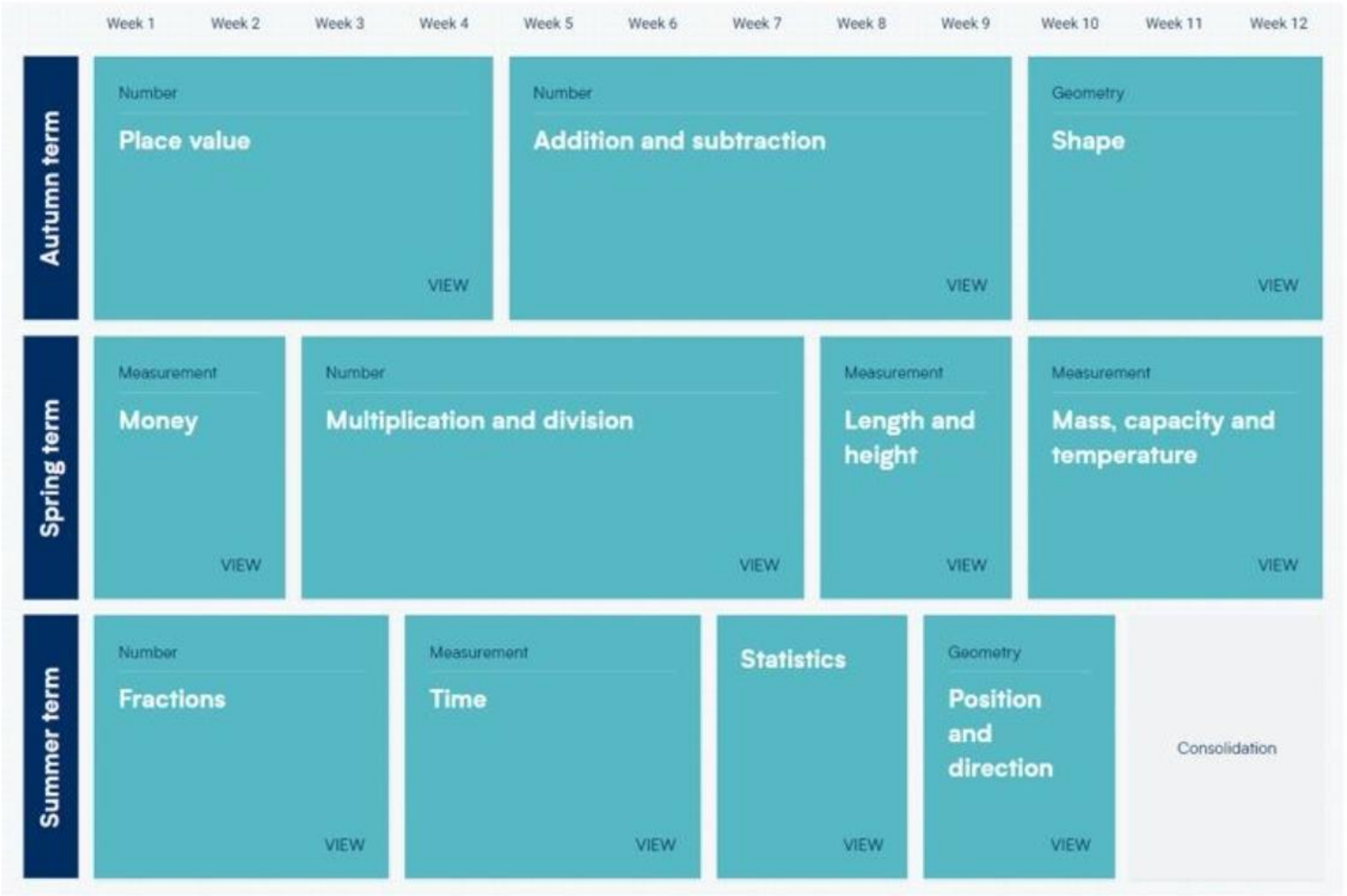
□ Practitioners observing children as they engage in a range of learning experiences.

□ Assessment judgements to be made on what children can do independently within a range of contexts

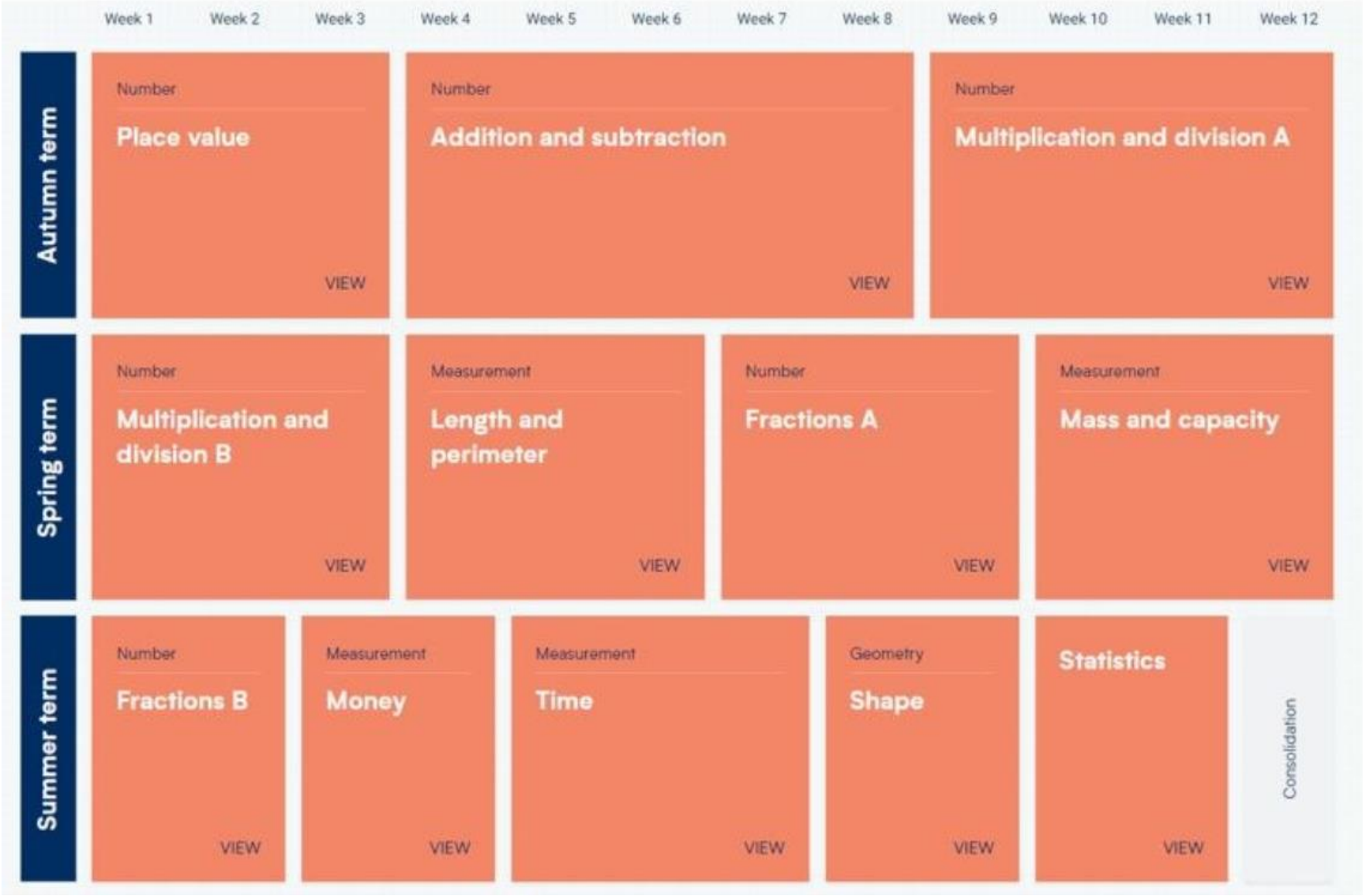
Year 1 – Yearly Overview



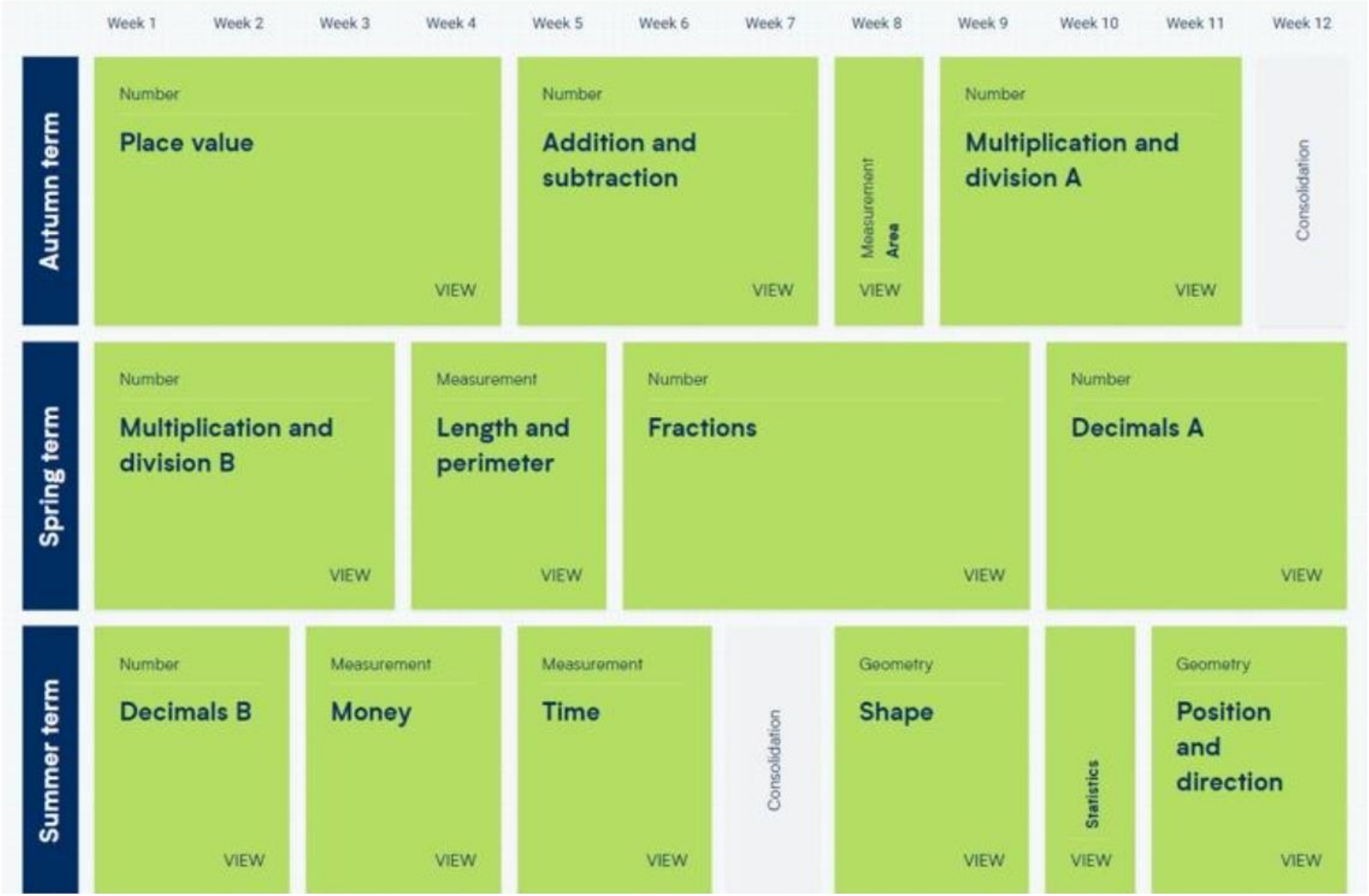
Year 2 – Yearly Overview



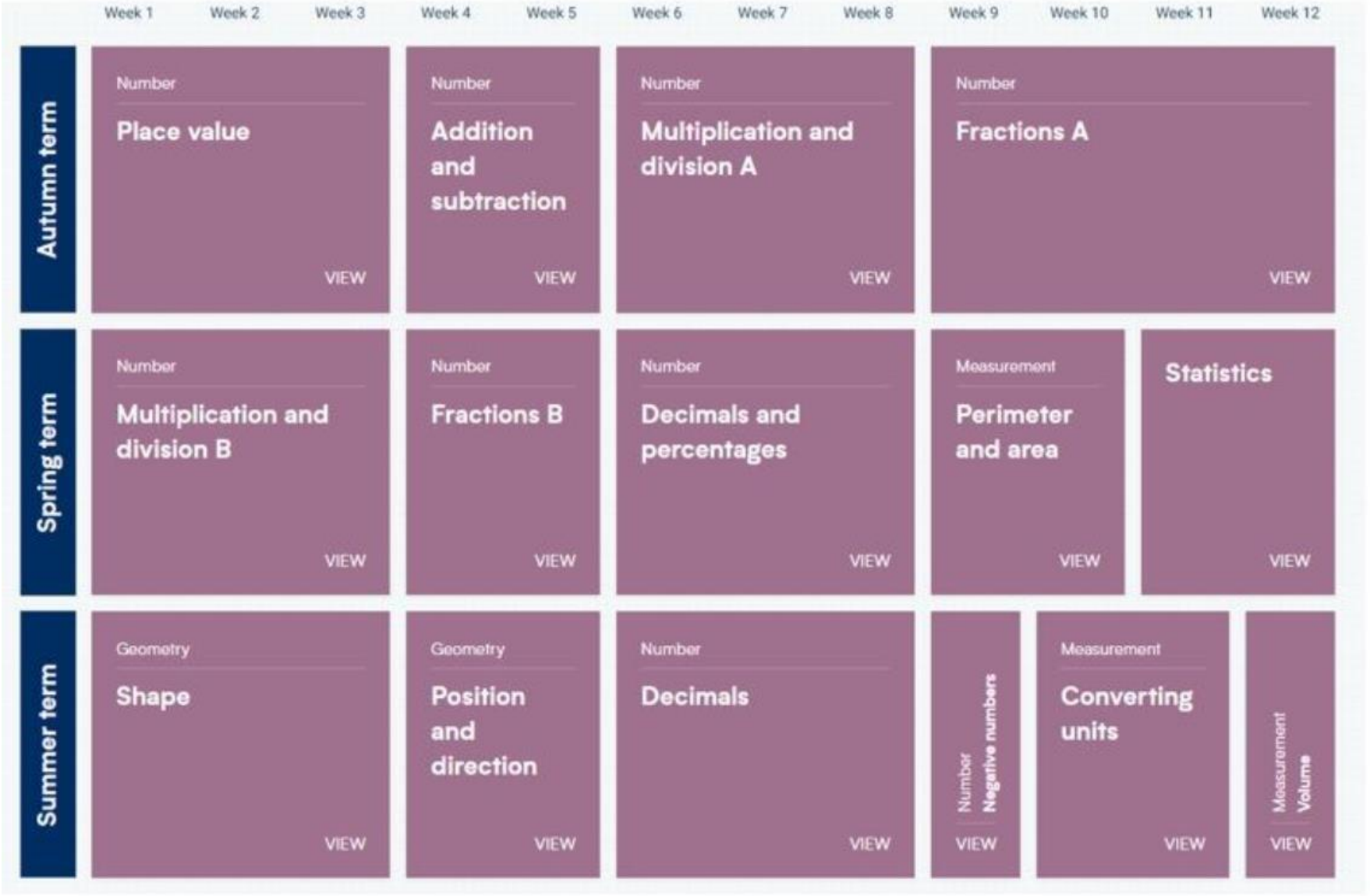
Year 3 – Yearly Overview



Year 4 – Yearly Overview



Year 5 – Yearly Overview



Year 6 – Yearly Overview