CALCULATION POLICY FOR ADDITION AND SUBTRACTION

YEAR 1

Year 1			
	Block 1	Block 2	Block 3
Calculation content	CALCULATION (UNIT 1) • Addition facts for 5-10 CALCULATION (UNIT 2) • Subtraction from 5-10 MONEY (UNIT 1) • Adding amounts to a total of 10p • Subtracting from a total of up to 10p	CALCULATION (UNIT 3) • Number bonds for ten (r) • Adding to numbers to ten and related subtraction facts (11-20) CALCULATION (UNIT 4) • Add and subtract to/from 11-15 CALCULATION (UNIT 5) • Add and subtract to/from 11-15 (r) • Add and subtract to/from 16-18 • Adding single digit numbers to 11-19 • Subtracting single digit numbers from 11 to 19 • Number bonds for 20 MONEY (UNIT 2) • Adding amounts to a total of 20p • Subtracting from a total of up to 20p	Ongoing practice of number bonds for numbers to ten and related facts.

Year 1			
	Block 1	**Block 2**	**Block 3**
Strategies/ methods	Addition facts for 5-10 The core representation that supports children's learning of addition facts for 5-10 is the tens frame with two-colour counters. Children use their ability to subitise to articulate addition facts for numbers to 10. Teachers need to have two tens frames with two colour counters on display throughout Year 1 and children need access to their own tens frames and counters. Other representations of facts for 5-10 are also encountered within the lessons to provide more opportunities for children to derive number facts. These include dominoes, bar models and part-whole models. Subtraction from 5-10 The first two subtraction lessons focus on subtraction as reduction (taking away) and make use of pictorial representations to support this. From lesson three, as for learning about addition facts, the core representation that supports children's learning of subtraction facts for 5-10 is the tens frame with two-colour counters.	Number bonds for ten (r) Cuisenaire® rods were encountered in some lessons in Block 1, but were not essential for successful learning. In this revision lesson they are integral to the lesson. Knowing additive facts to 10 is a key goal for the end of Year 1 and ongoing practise is essential to achieve this. It is suggested that ongoing number facts practice for 5-10 is supported by additional resources from this point, including Cuisenaire rods. During this practice children need to be taught to derive additive facts within 10 from previously memorised facts. For example, using knowledge of doubles to derive near doubles, eg: 5 + 4 = 4 + 4 + 1 = 9	Ongoing practice of number bonds for numbers to ten and related facts.

Year 1			
	Block 1	**Block 2**	**Block 3**
Strategies/ methods	<u>Subtraction from 5-10 (ctd)</u> The relationship triangle is introduced during the lesson on subtracting from 9. <u>Adding amounts to a total of 10p</u> As for earlier work on addition facts for 5-10 the tens frame with two-colour counters supports understanding about adding amounts to a total of 10p. Representations of coins are also used. <u>Subtracting from a total of up to 10p</u> The core representation that supports children's learning of subtraction from amounts to a total of 10p is the tens frame with two-colour counters. Representations of coins are also used.	<u>Adding to numbers to ten and related subtraction facts (11-20)</u> Children need secure recall of facts such as 10 + 1, 10 + 2 and their related subtraction facts (11 – 1, 12 – 2). This will support later work on additive facts that bridge ten using the making the next/previous ten method: 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14 The lessons on adding to numbers to ten and related subtraction facts make extensive use of number tracks, tens frames and place value cards to support understanding. <u>Add and subtract to/from 11-15</u> Children engage in a series of lessons about making 11, 12, 13 etc with numbers other than 10 and 1, 10 and 2, 10 and 3. The purpose is to lay the foundations of understanding that will support the ability to use the making the next/previous ten strategy in Year 2 and beyond.	

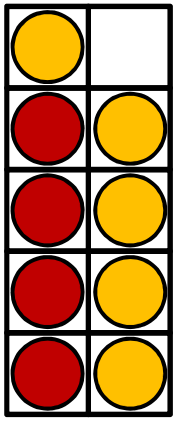
Year 1			
	Block 1	Block 2	Block 3
Strategies/ methods		Whole lessons are spent exploring all the ways to make numbers from 11-15 (and the related subtraction facts). For example 15 = 9 + 6 = 8 + 7 = 7 + 8 = 6 + 9 Tens frames support the understanding that 9 + 6 = 10 + 5. Children also encounter the numeric representation for this. <u>Add and subtract to/from 11-15 (r)</u> Revision of making next/previous ten Relationships - using an anchor fact to find new facts: 10 + 5 = 15 so 9 + 5 is one less than 15 <u>Add and subtract to/from 16-18</u> Same approach as for adding and subtracting to/from 11-15 in Block 2.	

Year 1			
	Block 1	Block 2	Block 3
Strategies/ methods		<u>Adding single digit numbers to 11-19</u> Using known facts to derive new facts, eg: 6 + 2 = 8 so 16 + 2 = 18. Also partitioning first addend into tens and ones then combining ones, eg: 16 + 2 = 10 + 6 + 2. <u>Subtracting single digit numbers from 11 to 19</u> Similar approach to above, eg: 6 – 2 = 4 so 16 – 2 = 14 <u>Number bonds for 20</u> The core representations that support children's learning of facts for 20 (and related facts) is tens frames with two-colour counters and the relationship triangle. <u>Adding amounts to a total of 20p and subtracting from a total of up to 20p</u> Within the lessons coins are the core representation. Teachers may want to support the calculation process for some children by using tens frames with two-colour counters.	

Year 1 - Block 1

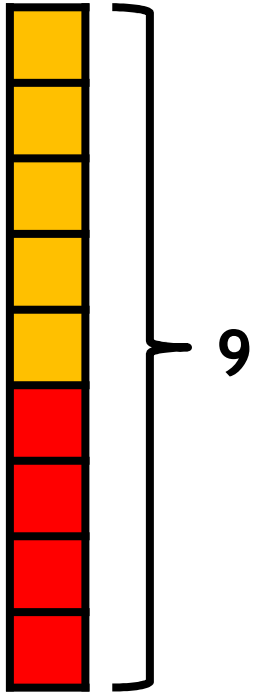
4 + 5 = 9

Addition facts for 5-10

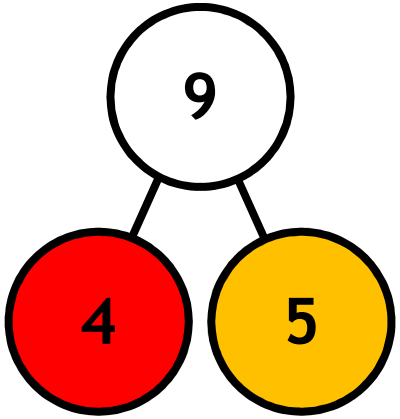


4 + 5 = 9

tens frame

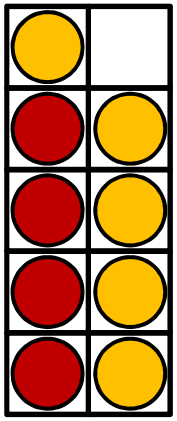


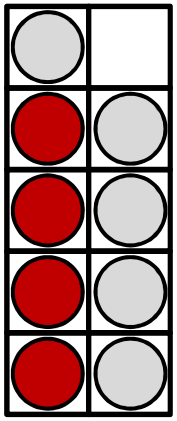
bar model



part-whole model

Subtraction from 5-10

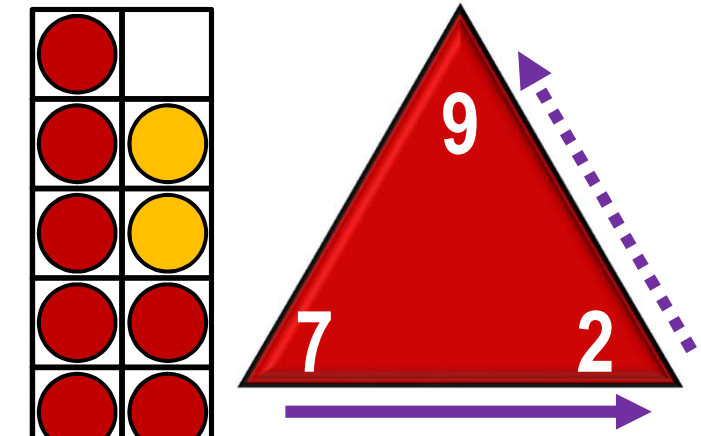




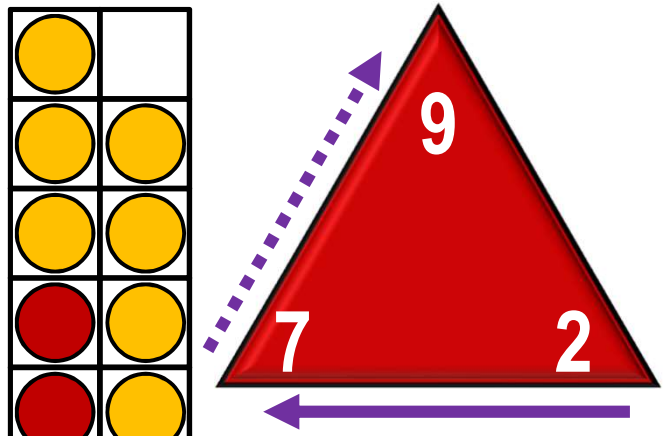
9 - 5 = 4

9 - 5 = 4

Children encounter two representations of tens frames.
The first reflects the nature of the concrete apparatus – two-colour counters.
The second representation shows the subtrahend greyed out. This is often used when addition and subtraction calculations are displayed on the same slide. (See next page.)

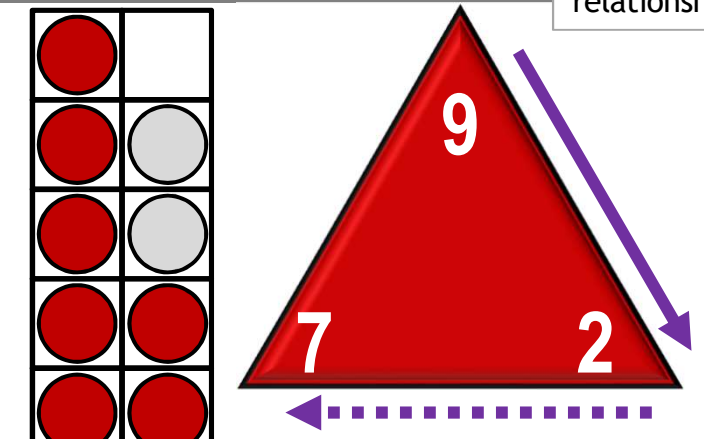


7 + 2 = 9

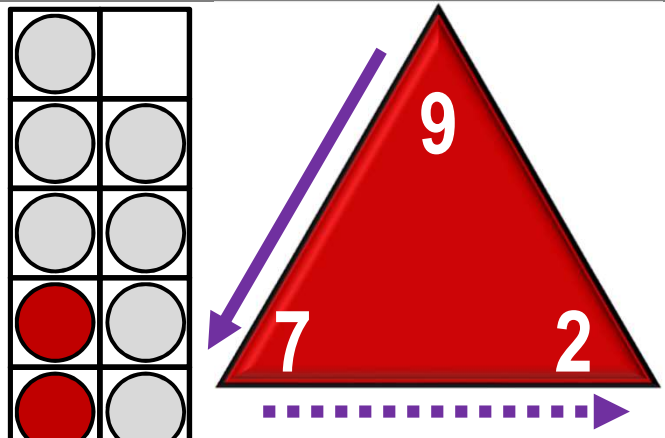


2 + 7 = 9

relationship triangles



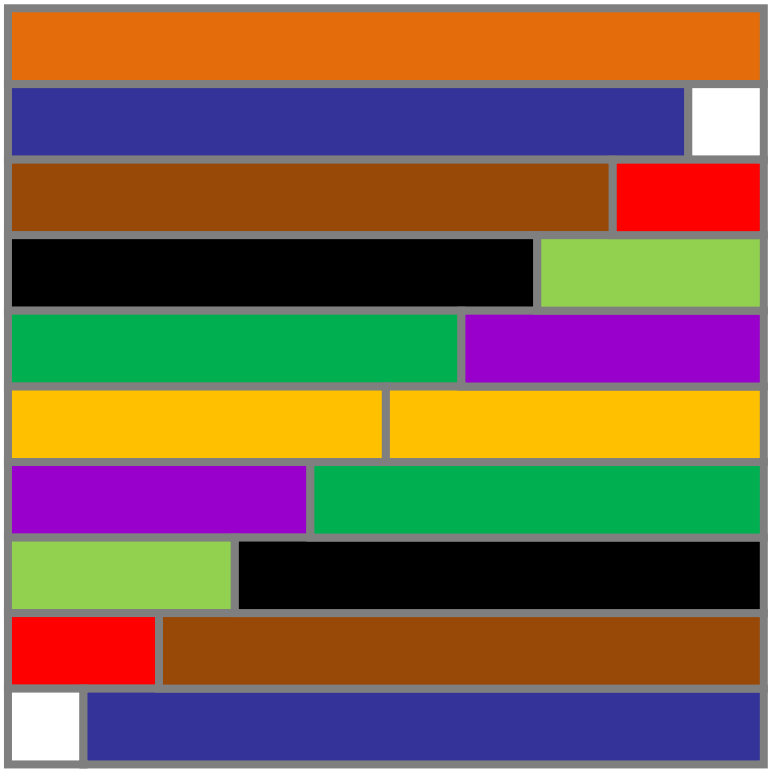
9 - 2 = 7



9 - 7 = 2

Year 1 - Block 2

Number bonds for ten (r)

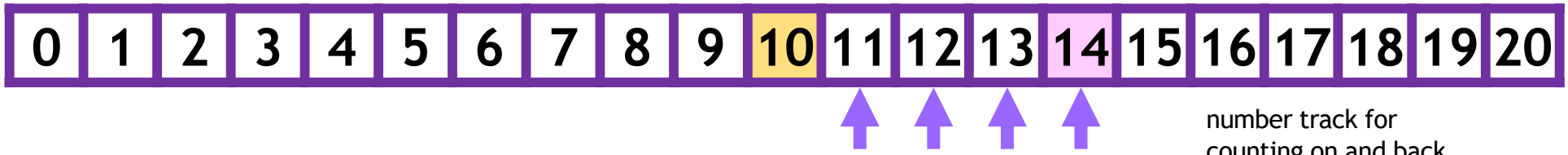


Cuisenaire® rods

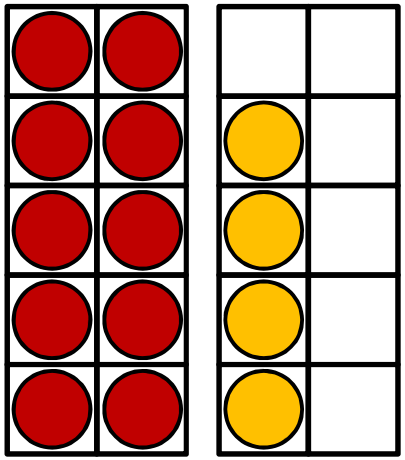
Year 1 - Block 2

10 + 4 = 14 • 14 - 4 = 10

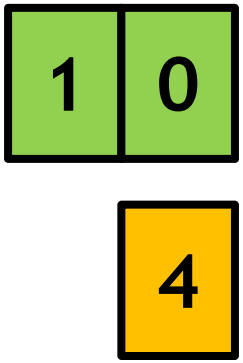
Adding to numbers to ten and related subtraction facts (11-20)



number track for counting on and back



tens frames

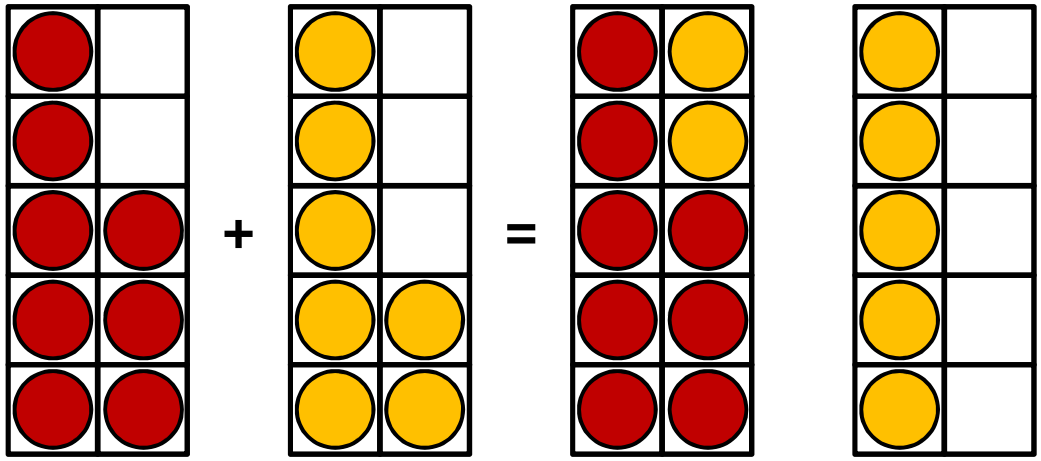


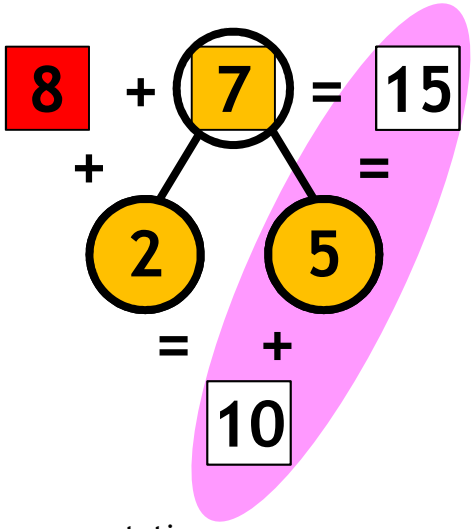
place value cards

Year 1 - Block 2

8 + 7 = 15 • 15 - 7 = 8

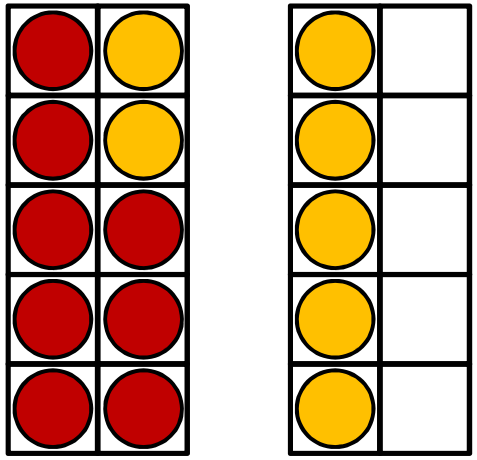
Add and subtract to/from 11-18

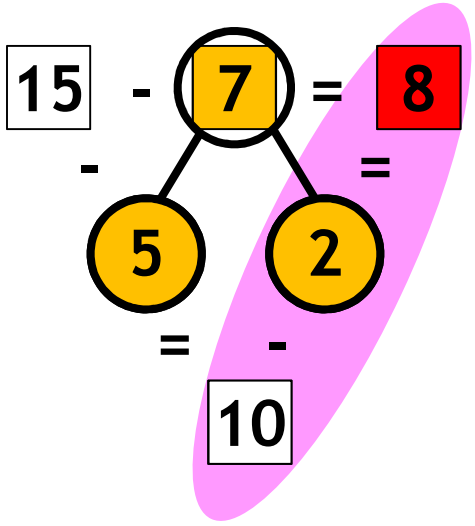




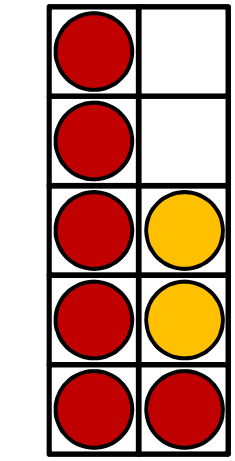
tens frames

numeric representations

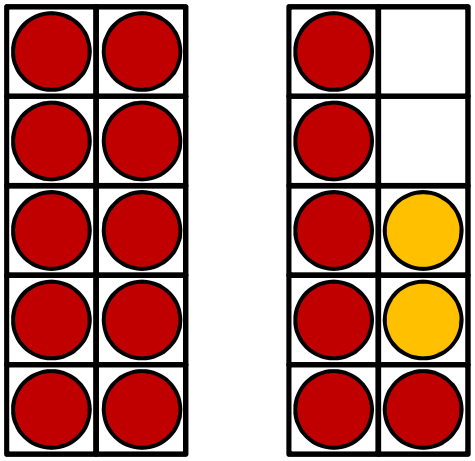




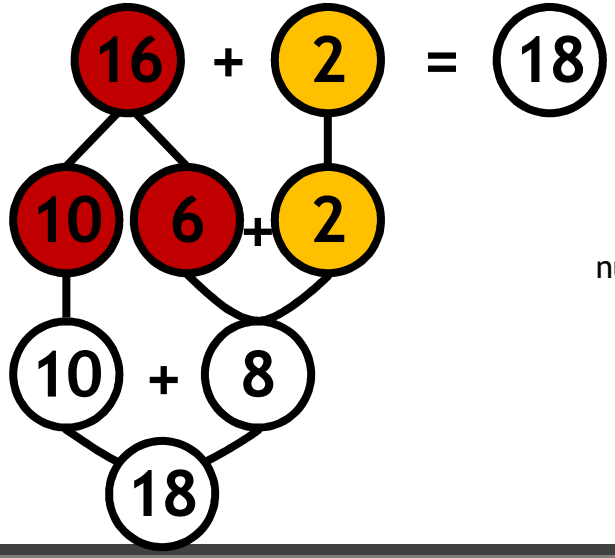
Adding single digit numbers to 11-19



6 + 2 = 8

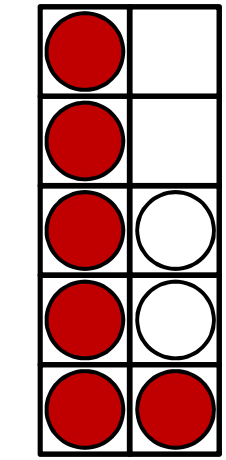


tens frames

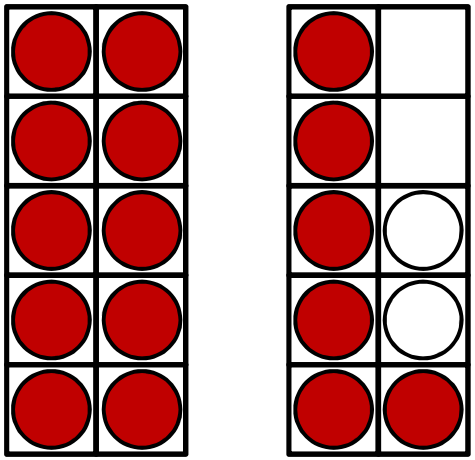


numeric representation

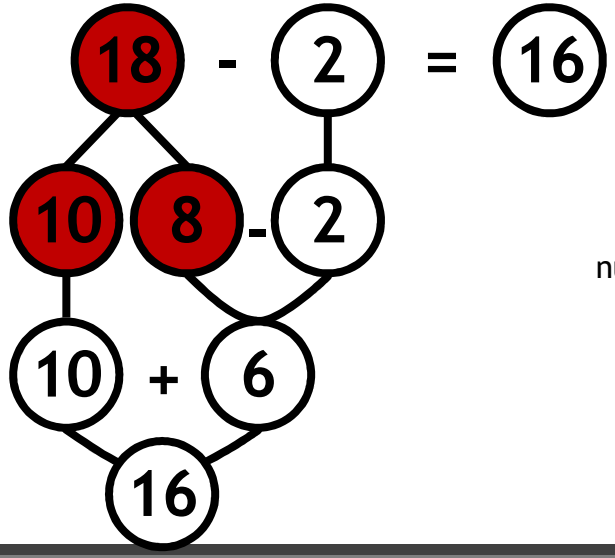
Subtracting single digit numbers from 11-19



8 - 2 = 6



tens frames

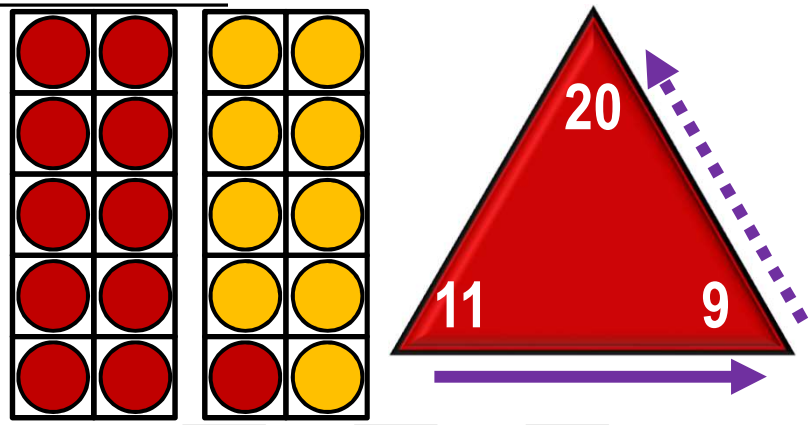


numeric representation

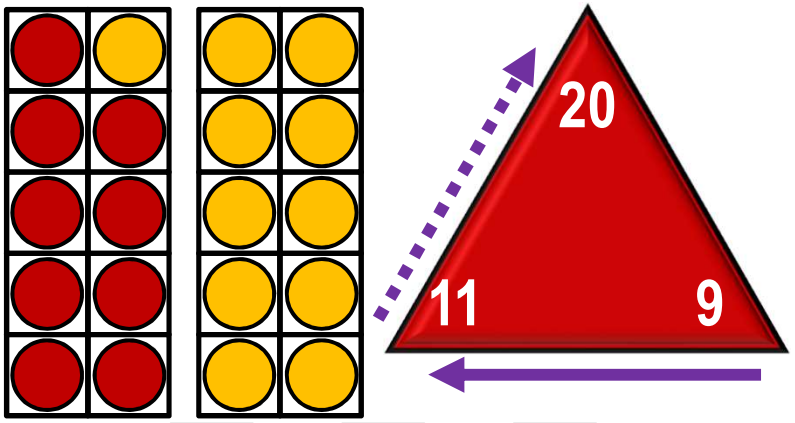
Year 1 - Block 2

Number bonds for 20

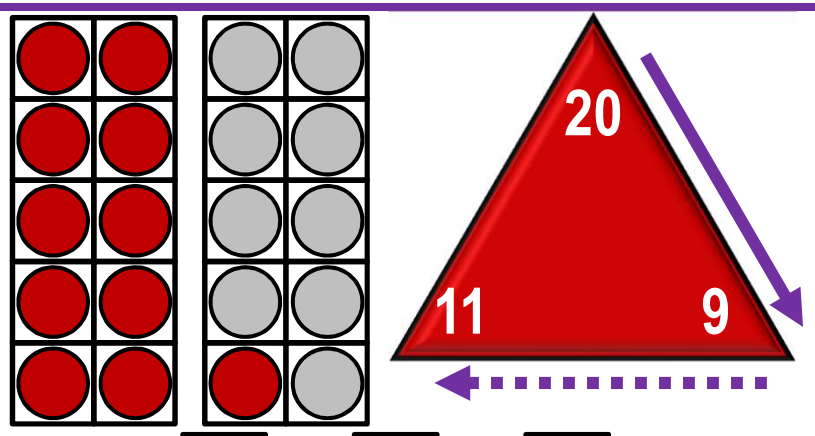
tens frames and relationship triangles



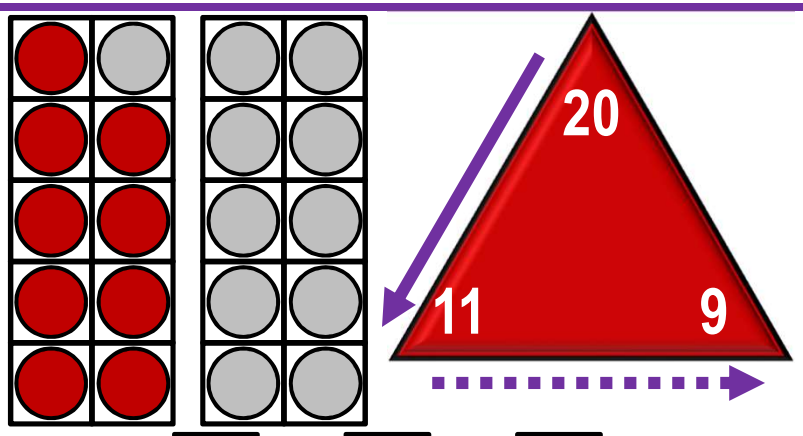
11 + 9 = 20



9 + 11 = 20



20 - 9 = 11



20 - 11 = 9