Old Town Infant School and Nursery

MATHS MEDIUM TERM PLANNING

Coastal Learning PARTNERSHIP

RECEPTION - Spring 1

Links to progression document

count objects, actions and sounds matching one number name to each item
subitise to 5 (ELG) and count to check
link the number symbol with its cardinal number value to 10
write recognisable numbers to 10
compare quantities up to 10 using the language of greater than/less than, more than,/fewer, the same (ELG)
understand the one more/one less relationship between consecutive numbers
recognise the pattern of the counting system counting verbally
automatically recall number bonds to 5 (ELG)
understand different ways of making numbers up to 10 (ELG)
use visual representations* such as part-part whole up to 10
solve real world mathematical problems with numbers up to ten
compare capacity, using comparative language, such as 'than'
use comparative language to group objects
recognise and describe simple repeating patterns involving numbers or shapes e.g. AABBAABB, ABCABC
continue simple repeating patterns involving numbers or shapes
create simple repeating patterns involving numbers or shapes
say what they are trying to find out
think aloud how to work things out
record simple numerical and pictorial representations
use concrete objects to work out the answer
explain to an adult how they worked out the answer

Guidance	Key Questions	Sentence Stems	Key vocabulary	Fluency
0-5 (Introduce 0)				
Children are introduced to the concept of zero. They learn that the number name 'zero' and the numeral 0 can be used to represent this idea. Children use their knowledge of zero to find an amount to five, including zero. Include resources such as blank number cards, blank dot plates or blank faces on a dice. Children continue to develop the skill of perceptual subitising. This form of subitising refers to instantly recognising the number of objects in a group without needing to count them. Encourage children to represent their subitising by showing the numeral '0', showing no fingers or an empty five frame. Use images, stories and rhymes that include representations of 0–5 to embed this skill. Support children to represent the numbers 0-5 in many ways and in different practical contexts in order to embed their understanding. Use meaningful contexts, such as number rhymes, and prompt children to represent the numbers they see on five frames. This will consolidate their understanding that when the five frame is full, this represents 5, and when it is empty, this represents zero.	Where can you see zero? Where can you see the numeral zero? How can you make this amount into zero? Where can you find/see _____? How many different ways can you find ___ ? What do you see? How do you see it? How can you show me ___? How do you know?	I can see zero _____. There are zero _____ . I know this is zero because... …. I know this is not zero because…… I can see…… There are_____ dots altogether. There are _____ I can see _____without counting. I can subitise ___. I counted ____.	Zero One, two, three, four, five Subitise Count Five frame	Count forwards to 20 Subitising: Lots of fours Four of something (NB - see how can always be moved into a square shape) Re-visit: Position

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1-5 composition (number bonds to 5)				
Children are guided to explore the composition of numbers from zero to five. Children will continue to develop the understanding that all numbers are made up of smaller numbers and that this can include zero. Prompt them to notice the different compositions of numbers to five by asking questions such as, "How do you see it?" Encourage children to recognise that numbers can also be made up of more than two parts. Physically drawing around or moving objects will support children with this. Prompt them to describe both the whole and the component parts of the number. Children build on their learning of composition to five and perceptual subitising to develop their understanding of conceptual subitising. This is the ability to see sets of numbers within other sets, such as seeing the two and three in the number five, without having to count. Children are taught to recognise a whole quantity by recognising and combining these smaller quantities. Children will begin to explore number bonds to 5 and continue to learn and use the terminology of parts and whole e.g. 3 is a part and 2 is a part. The whole is 5. Part part whole will be introduced at this stage – hoops can be used to represent this when working practically. A visual on the board will also be introduced.	What do you see? How do you see it? What is the whole? What is/are the part/parts?	The whole is _____ ____ is a part and _____ is a part (and ____is a part). I see ____ and _____. There are _____altogether. If _____is a part, then the other part must be ____.	Part Whole Number bond	Count forwards to 20 Subitising: Tetrominoes of 4 – spot the matching pair Tetrominoes of 4 – move a tile to make them match (multi-link to be used to support this – particularly to show orientation changes) Re-visit: 1 less (within 5)
Pattern				
Children are introduced to patterns and explore simple examples to develop their understanding of both the word and the concept. They will explore, copy, continue and create different patterns and learn that patterns can be both visual and auditory (involving sound). Provide children with many opportunities to see and explore a range of simple patterns. Point out where patterns can be seen in the environment. This may be patterns on clothes, such as checks or stripes, or different patterns around school and at home. Introduce children to AB patterns, which are patterns with only two parts repeating, such as red/green or dog/cat. Children can then identify the pattern and attempt to continue it. Encourage them to say the pattern out loud to embed the AB structure. When showing and modelling patterns to children, ensure that there are three full units of repeat for them to be able to copy and continue. Ensure that children are exposed to visual patterns that build both vertically and horizontally. Encourage children to make their own patterns with objects. These could relate to children's interests to make them more meaningful. Once children are confident in making patterns, create further challenge by asking them to spot an error in an AB pattern. Start with an extra item added to the pattern, then progress to there being an item missing from the pattern. Children can then be prompted to fix the problem.	What pattern can you see/hear? What do you notice? What words/sounds do you hear? How does the pattern continue? What do we need to copy this pattern? What pattern have you made? What are you going to use to make your pattern? What mistake can you see in my pattern? How could you fix the mistake in my pattern?	I can see a ____ pattern. I can hear a _____pattern. This is a ____pattern. The _____comes next in the pattern. The pattern is _____, _____. I have used _____to make my pattern. Next, I need _____to continue my pattern. I need _____to finish my pattern. The _____is in the wrong place.	pattern AB copy continue create repeat/repeating	Count backwards from 20 Subitising: Three or four? Re-visit: Mass (heavier or lighter)

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Find, subitise and represent 6, 7 and 8				
Children explore finding different representations of the numbers 6, 7 and 8 (including number formation – teach number rhymes). Support them to first match the verbal number names to quantities and then to numerals. Children should be encouraged to continue to use conceptual subitising skills and apply the counting principles to check when they count to 8 and when they represent these numbers in different ways. Provide opportunities for children to 'move it to prove it' when noticing smaller numbers/quantities within 6, 7 and 8. Use one-to-one correspondence to count 6, 7 and 8 objects from a larger group. To further develop children's understanding of cardinality, support them to know when to stop counting and that the number they say is the total number of objects in the set. Children may be able to use their conceptual subitising skills to support this e.g., when asked to get 7 objects, they get three, two and then another two.	How many are there altogether? Where can you find 6/7/8? Where else?	There are 6/7/8 _____ There are _____altogether. I can see...	6, 7, 8 represent count	Count backwards from 20 Subitising: What do you see? (Practise subitising 1, 2, 3 and 4) Re-visit: 1 more and 1 less (within 5)
Composition of 6, 7 and 8				
Children will continue to apply their conceptual subitising skills and the counting principles, in order to check, when they count to 6, 7 or 8. Prompt children to represent up to 8 objects by introducing them to using a ten frame. Encourage children to subitise the 5 and start to recognise the pattern of 6, 7 and 8 on a ten frame. Children explore the composition of numbers to 8. They learn how their skills of perceptual subitising and counting can be used to see and represent the composition of larger numbers in different ways. Children should be given the opportunity to explore partitioning in many ways with a wide range of objects. Encourage children to find all the ways that they can partition the same number. Prompt children to represent the parts they see, using concrete manipulatives or through mark-making.	How many altogether? How many different ways can you show 6/7/8? What parts can you see? What is the whole?	There are 6/7/8 _____. There are _____ altogether. I can see….. There are 6/7/8 _____. I know this because… ____ is a part and ___ is a part. The whole is _____.	Part, whole, altogether	Count forwards and backwards from 20 Subitising: 1, 2, 3 and 4 on five frame Re-visit: Shapes
Compare capacity				
Children learn that objects can be compared and ordered by their capacity. Provide children with a wide range of opportunities to explore different containers and boxes and their capacity. Begin by exploring practically the idea that capacity is the maximum amount that something can hold. Initially they will use the language 'this holds the most' and 'this holds the least' to explain what they notice about capacity. Explore how containers look when full and empty. They will explore how non-standard units can be used to measure capacity. Encourage children to use the language 'tall', 'thin', 'narrow', 'wide' and 'shallow' when describing containers and prompt them to experiment filling these using other sized containers. Encourage children to make direct comparisons by pouring from one container to another. During activities and in provision, prompt children to use smaller pots or ladles to make indirect comparisons by counting how many of one container it takes to fill another. Children can then order the containers from the smallest capacity to the greatest capacity.	Which holds more/the most? How do you know? Which holds less/the least? How do you know? Does this container hold more or less? How can you find out? How many does the container hold? How can you measure the capacity of the containers? How many are needed to fill the container? How many _____of ____ can the container hold? Which container has the greatest/smallest capacity?	The ____ holds more. The ____ holds less. The ____ has the same capacity as the ____. The container holds more/less ____than _____. The ____has the same capacity as _____cubes/pine cones/marbles. The container holds ____cupfuls/spoonfuls of ____ . The _____holds more/the most. The _____holds less/the least.	Capacity Full, empty, half full, nearly full, nearly empty More, less, most, least Tall, thick, narrow, wide, shallow	Count forwards and backwards from 20 Subitising: Which piece? (subitise up to 4 to work out which piece fits) Tip: may need to snip whole shape on slide to then show rotation to get it to fit Re-visit: 0-5 number recognition

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RECEPTION – Spring 2

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count objects, actions and sounds matching one number name to each item
subitise to 5 (ELG) and count to check
count beyond 20 verbally (ELG)
link the number symbol with its cardinal number value to 10
write recognisable numbers to 10
compare quantities up to 10 using the language of greater than/less than, more than,/fewer, the same (ELG)
understand the one more/one less relationship between consecutive numbers
recognise the pattern of the counting system counting verbally
automatically recall number bonds to 5 (ELG)
automatically recall some number bonds to 10 (ELG)
understand different ways of making numbers up to 10 (ELG)
use visual representations* such as part-part whole up to 10
solve real world mathematical problems with numbers up to ten
say what they are trying to find out
think aloud how to work things out
record simple numerical and pictorial representations
use concrete objects to work out the answer
explain to an adult how they worked out the answer

Guidance	Key Questions	Sentence Stems	Key vocabulary	Fluency
Addition				
Children will use real objects to see that the quantity of a group can be changed by adding more. The 'first, then, now' structure is a very effective way to help build their understanding by creating mathematical stories in meaningful contexts. For example, 'First 5 people got on the bus, then 2 more got on, now there are…….' Use tens frames, number tracks and their fingers to support this learning. Encourage use of subitising skills. Encourage counting on skill. To deepen learning, provide children with 'first, then, now' number stories where the 'then' part is missing. For example, "There were 5 children on the bus, then we don't know how many more got on, but now there are 8 children on the bus." Support children to use real objects, such as a ten frame and counters, to find the missing number that was added. For example, they represent the starting number with red counters and then they add yellow counters until they reach the total amount. The number of yellow counters represents the number that has been added.	How many are there? How many were there first? How many are there now? How many are there altogether? How many were added?	First there were ____. Then _____more were added. Now there are _____. There are _____ altogether. _____ were added. I added_____.	First, then, now Add How many? Altogether Total	Count forwards to 30 Subitising: Lots of five Five of something Re-visit: Compare amounts

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Taking away				
Children explore the change structure of subtraction (reduction) by taking away. Children will have experience of taking away objects in everyday life and this is built on by focusing on taking away more than 1 object. Encourage children to use real objects to see that the quantity of a group can be changed by taking some away. Prompt them to remove the items and then subitise/count to see how many are left. The 'first, then, now' structure is an effective way to help build their understanding by creating mathematical stories in meaningful contexts, using ten frames, number tracks and their fingers. To add challenge, provide children with 'first, then, now' number stories where the 'then' part is missing. For example, "There were 5 children on the bus, then we don't know how many got off, but now there are 2 children." Support children to use real objects to find the missing number that was taken away. They can represent the starting number with counters on a ten frame, then remove counters until they represent the number of items there are now. Prompting children to talk about how many counters were taken away will help them understand the missing part.	How many are there? How many were there first? How many are left? How many are there now? How many were taken away?	First there were ____. Then ____were taken away. Now there are ____. There are ____left. I have ____, how can you show me ____? ____ were taken away. I took ____away and now there are ____.	Take away/subtract First, then, now Less Equals Missing part	Count forwards to 30 Subitising: Pentominoes of 5 – spot the matching pair Pentominoes of 5 – move a tile to make them match (multi-link could be used to support this) Re-visit: 0-5 composition of number/number bonds to 5
Find, subitise and represent 9 and 10				
Children explore and find different representations of 9 and 10. They match the verbal number names to numerals and quantities. Encourage children to use conceptual subitising skills to find/represent to 10 using objects in different arrangements and check by counting, touching each object as they count. They should recognise that the final number they say is the quantity in that set. Encourage children to find objects in the provision and notice groups of 9 and 10 as well as the numerals. Extend how children represent 9 and 10 and support the abstraction principle by including movements such as claps or clicks. Cue children to listen to the number of sounds when banging a drum up to 10 times, and prompt children to show the number of beats on their fingers.	Where can you see 9/10? How many ways can you find 9/10? How many are there altogether? How many are there? How many are there now? How many different ways can you show 9/10?	I counted/I see _____. There are 9/10 _____. There are _____ altogether.	9, 10 altogether represent count	Count backwards from 30 Subitising: Four or five? Re-visit: Pattern
Composition of 9 and 10				
Children use conceptual subitising to identify a whole quantity within 10 by subitising the smaller groups that make up that number. This skill will support children to develop mental images for addition and subtraction, which helps children to move away from counting on and counting back. Prompt children to recognise a number by grouping it into smaller sets and then saying each amount before confirming the whole number. Encourage children to mark-make and print with bingo dabbers to represent the numbers to 10. They can then subitise where they see smaller groups and draw around them. Explore partitioning in different ways with a wide range of objects to develop children's awareness. Play games that explore the composition of numbers to 10 so that children can then emulate these in their own play and self-chosen activities. Sharing stories and images that display different compositions and pointing these out will emphasise this concept to children. Point out composition to ten when playing with children in provision.	What do you see? How do you see it? What is the whole? What are the parts?	The whole is _____. _____ is a part and _____is a part. I see _____ and _____.There are ____altogether. If _____ is a part, then the other part must be _____.	part, whole	Count backwards from 30 Subitising: What do you see? (Practise subitising 1-5) Re-visit: Capacity

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One more/less within 10				
Children build on their skills of finding '1 more/less' with numbers to 5 by now recognising this pattern with the numbers to 10. Children understand that as they count on, each number is 1 more than the previous number and as they count back, each number is 1 less than the previous number. They become aware of consecutive numbers and see that amounts increase/descrease in size when 1 more is added/taken away. They should recognise that the order of numbers when counting does not change and have the stable order principle embedded with the numbers up to 10. Read stories or sing songs that include the '1 more/less' pattern and support children to notice and make comparisons as they play in provision.	What is 1 more than ____? What is the number after _____? What is 1 less than _____? What is the number before _____? How many are there? How many are there now?	The number after ____ is ____. ____ is 1 more than _____. 1 less than ____ is _____. _____ is 1 less than _____.	one more, one less before, after count on, back increase, decrease	Count forwards and backwards from 30 Subitising: 1-5 on five frame Re-visit: 6, 7, 8 composition
Bonds to 10				
Children explore number bonds to 10 using real objects in different contexts and build 10 using two parts. In provision, explore different ways of building the bonds to 10, for example, parking 10 toy cars in two car parks. Ten frames or egg boxes with 10 holes can be partially filled with objects. Ask children how many more we need to make 10. Providing sets of 10 objects in provision supports children to make their own self-chosen explorations of the bonds to 10. Seasonal songs also support children making bonds, using actions with fingers to represent making 10. Children can then explore bonds to 10 further and learn that there can be three or more parts, not just two.	What is the whole? What are the parts? How many different bonds to 10 can you find?	The whole is _____. _____is a part and _____is a part. ____ and____ are a bond to 10 If _____is a part, then the other part must be ____.	Number bond Whole Part	Count forwards and backwards to 30 Subitising: Which piece? (subitise up to 5 to work out which piece fits) Re-visit: Guess my rule (sorting)