RESOURCES
MATHS KS1

MATHS USING THE OUTDOORS

KS1

Maths Using The Outdoors - KS1

MATHS PLAN (DATA HANDLING)

Date: 03/03/14	**Class:** Year 1	**Unit:** Data Handling	**Term:** Spring 2
Mental Oral objective: Chn to practise counting in 2s, 5s, 10s with a talk partner. Teacher to then count in 2s and then select a child to state the number that follows in the sequence. Repeat the process for both the 5s and 10s.	**Consolidation of previous learning/knowledge/skills:** Building on the children's knowledge of block graphs and pictograms and the methods required to obtain data.	**Teacher focus group:** **SEN:** Chn to explore the outdoor environment and count a variety of objects that they spot (e.g. 6 flowers, 4 bins etc). Chn to then state how many of each object there was in digits and words.	**TA group:** **LA:** Chn to explore the outdoor environment and generate a tally based on what they see. Chn to choose their own criteria and be encouraged to bunch in 5s and count in 5s.
Lesson objective: To be able to write numbers (1-20) as digits and words (SEN). To be able to record data using a tally chart (BA.A.HA).	**New skills/Knowledge/vocabulary:** Developing children's understanding/knowledge of the need for 'closing the gate' when constructing a tally chart.	**Independent groups:** **A:** Chn to explore the outdoor environment and form a tally based on the following research question: 'what plants are growing?' **HA:** Chn to explore the school grounds in order to interview staff members. Chn to form a tally based on the following research question: 'which fruits do the staff like?' Once recorded in a tally chart, chn to then write sentences detailing which choice was the most popular and by how much.	
Teaching Input: - Pose the following questions: 'how many people have blue eyes? How many people have brown eyes?' Elicit from the chn how we could find this information out and how the data could be recorded. - Take the chn's suggestions and then teacher to model creating a tally chart and crossing through the 5s. Teacher to then model counting the responses up in 5s. - Allow chn time to practice using the animal tally provided.	**Reading opportunities:** Chn to read the PowerPoint displayed and the word bank provided. **ICT opportunities:** Interactive whiteboard. PowerPoint software.	**Resources:** Outdoor environment. Interactive whiteboard. Whiteboards and pens.	**Plenary/Assessment activity:** Chn to be provided with the opportunity to voice their findings through the use of the following prompting questions: 'what did you find out?', 'which criteria was most common/popular?', 'how do you know?', 'by how much was it the most popular?' and 'what other ways could you present your findings?

Data Handling Lesson

MATHS PLAN (MEASURING)

Date: 21/10/13 – 8/10/13	Class: Year 1	Unit: Measure	Term: Autumn 1
Mental Oral objective: Chn to be encouraged to practise counting up in ones (extend to what number comes before and after a given number?).	**Consolidation of previous learning/knowledge/skills:** Building on the children's knowledge of and skills in estimating and measuring (using non-standard units). Acknowledge and tackle any misconceptions that arise.	**Teacher focus group:** SEN: Chn to be based in the classroom and measure the distance to specific landmarks using their footsteps.	**TA group:** HA: Chn to be provided with the opportunity to estimate and measure the distances to designated landmarks outside of the actual school grounds (surrounding areas).
Lesson objective: To be able to estimate and measure the distance between landmarks using footsteps.	**New skills/Knowledge/ vocabulary:** Developing children's understanding/knowledge of the term 'distance'. Raising awareness of the capabilities of using our feet as measuring tools.	**Independent groups:** BA: Chn to be based in the school corridors. Chn to be provided with a variety of picture cards of corridor landmarks with attached estimations. Chn to check which distance estimations are correct/incorrect by accurately measuring from the classroom. A: Chn to be based in the KS1 playground and provided with a variety of landmarks to reach from a given starting point. Chn to estimate 'in footsteps' the distance before accurately measuring. G&T: Chn to be based in a wide range of areas in the outdoors. Chn to be provided with a variety of landmarks to visit. Chn to estimate and measure the distance in footsteps.	
Teaching Input: - Discuss the term 'distance'. - Model estimating distance and how to accurately measure using our feet. – Chn to make estimations on distance (in footsteps) to sink, book corner, outside to bench. - Estimate how many steps to playground apparatus (as a class).	**Reading opportunities:** Chn to be supported in reading the text on the IWB. Chn to read the designated landmarks. **ICT opportunities:** Interactive whiteboard. Cameras for evidencing.	**Resources:** Outdoor environment. Picture cards of landmarks with attached estimation sheet.	**Plenary/Assessment activity:** Display a picture of the Head Teacher's office: This took me A) 9 steps to get to. B) 100 steps to get to. C) 32 steps to get to. Chn to check which answer is correct.

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MATHS PLAN (PATTERNS & SEQUENCING)

	Date: 22/10/13	Class: Year 1	Unit: Patterns & Sequences	Term: Autumn 1
Patterns & Sequencing Lesson	**Mental Oral objective:** Chn to participate in a game of '2D Shape Muddle' – Assessment: Can the children successfully sort out the 2D shapes from their muddled state?	**Consolidation of previous learning/knowledge/skills:** Building on the children's knowledge of and skills in forming a sequence of objects.	**Teacher focus group:** **SEN:** Chn's knowledge of repeated patterns to be embedded through targeted questioning.	**TA group:** **A:** Chn to be provided with the opportunity to discuss the pattern process in order to secure understanding and extend where appropriate.
	Lesson objective: To be able to make a repeating pattern.	**New skills/Knowledge/ vocabulary:** Developing children's understanding/knowledge of the term 'repeating' and 'pattern'. Raising awareness of following a 'rule' when generating patterns.	**Independent groups:** **SEN.BA.A.HA:** Chn to generate a repeating pattern using leaves that they collect from outside. Chn to first decide on how the pattern will vary (the rule) e.g. size, colour or shape then write this on their paper. Chn to then collect the leaves from outside and make their repeating pattern by gluing them on long strips of paper.	
	Teaching Input: - Discuss the terms 'repeating' and 'pattern'. - Discuss the vocabulary 'shape', 'colour' and 'size'. What do the chn know and what is new? - G&T to generate a word bank (e.g. sharp, pointy, bigger, thin, wide etc.) - With the help of the children teacher to form a repeating pattern using 2D shapes.	**Reading opportunities:** Chn to be supported in reading the text on the IWB and lesson instructions. **ICT opportunities:** Interactive whiteboard. Cameras for evidencing.	**Resources:** Outdoor environment. Leaves. Glue. Long strips of paper. Examples of patterns.	**Plenary/Assessment activity:** Chn to swap the repeating leaf pattern that they have generated and give their partner 2 stars and a wish. (Focus: Has your partner created a repeating pattern and how do you know?).

MATHS PLAN (ADDITION)

Date: 27/09/14	**Class:** Year 2	**Unit:** Addition	**Term:** Autumn 1

Addition Lesson

Mental Oral objective: Display a variety of number sequences on the IWB. Chn to note down the missing numbers in the sequences and the rule that has been applied.	**Consolidation of previous learning/knowledge/skills:** Building on the chn's knowledge of the term 'addition'. Chn to also consolidate their understanding of partitioning numbers to help add.	**Teacher focus group:** **SEN:** Chn to be taken outside and provided with a number of addition calculations (e.g. 13+19). Using chalk, chn to solve the calculations by drawing the number line method on the playground floor.	**TA group:** **BA:** Chn to be taken outside and provided with a number of addition calculations (e.g. 14+23). Using chalk, chn to solve the calculations by drawing the number line method on the playground floor.
Lesson objective: To be able to add 2 digit numbers together (SEN.BA). To be able to add 3 sets of numbers together (A.HA).	**New skills/Knowledge/ vocabulary:** Developing children's understanding and knowledge of using the number line method as a strategy for adding.	**Independent groups:** **A/HA:** In mixed ability pairs, chn to be provided with a variety of calculation challenges, e.g. add the number of panes of glass in the greenhouse to the number of yellow flowers in the flower bed. Chn to move around the school playground counting the items and then add them together using the number line method.	
Teaching Input: - Display the term 'add' on the IWB. Encourage chn to discuss in pairs the following: 'what other words can you think of for add?' and 'what happens when we add?' - After taking the chn's answers, display a calculation on the IWB (e.g. 19+18) and model to the chn the number line method. - Display 2 more calculations on the IWB and encourage the chn to practise using the number line method on their w/b's.	**Reading opportunities:** Chn to read the PowerPoint and the word problems displayed during the plenary (focus: comprehension skills). **ICT opportunities:** Interactive whiteboard.	**Resources:** Outdoor environment, Paper, Pencils, Chalk	**Plenary/Assessment activity:** Display 2 word problems on the IWB involving addition. Chn must read and understand the word problem, underline the key words and then solve on their whiteboards using the number line method taught today.

MATHS PLAN (SYMMETRY)

Date: 23/01/14	Class: Year 2	Unit: Symmetry	Term: Spring 1

Symmetry Lesson

Mental Oral objective: Chn to participate in a game of multiplication bingo. Chn to focus on multiples of 2 and multiples of 5.	**Consolidation of previous learning/knowledge/skills:** - To consolidate chn's ability to use a mirror to check if an object/image is symmetrical. - Chn to consolidate their understanding of the term 'symmetrical'.	**Teacher focus group:** **SEN:** Chn to be paired up and provided with chalk and taken into the school playground. Person A to draw a line of symmetry on the floor and half of an image. Person B must complete the image so that both sides are symmetrical.	**TA group:** **LA:** Chn to be taken into the school hall and paired up. Chn to be encouraged to participate in a session of symmetrical ballet.
Lesson objective: - To be able to identify lines of symmetry. - To be able to identify if an object/image is symmetrical.	**New skills/Knowledge/vocabulary:** - To develop an awareness that some objects may have more than one line of symmetry. - To develop an awareness of the terms 'vertical' line of symmetry and 'horizontal' line of symmetry.	**Independent groups:** **MA:** Chn to be provided with mirrors and explore the outdoor environment. Chn to locate letters around the outdoor environment, e.g. school signs and posters etc. and using their mirrors identify which letters are symmetrical. **HA:** Using the I-Pads or cameras chn must explore the outdoor environment and take images of the symmetrical objects that exist. Chn to be encouraged to explore inside the school building and outside the school building. Ensure that chn are able to identify why each object they find is symmetrical using the correct mathematical terminology.	
Teaching Input: - Teacher to revisit the previous lesson and pose the question, 'what does the word symmetry mean?' Take chn's suggestions. - Display a variety of images (e.g. Taj Mahal, a diamond, the letter Q, a circular pattern) on the IWB and ask the chn to identify the lines of symmetry. - Extend the chn by asking the following questions: 'why might an image be symmetrical or non-symmetrical?' and 'if it is symmetrical how many lines of symmetry does it have?'	**Reading opportunities:** Chn to read everything displayed on the IWB. MA group to read the signs and posters displayed around the school. **ICT opportunities:** Interactive whiteboard. I-pads/cameras.	**Resources:** Chalk, Mirrors, School signs, Posters, I-pads/cameras. **Key words:** Symmetry Reflection Mirror Line of symmetry Vertical Horizontal	**Plenary/Assessment activity:** **HA:** Chn to be encouraged to come to the front of the class and show the photos they took of objects around the school that are symmetrical. The rest of the class must identify how many lines of symmetry each object has and where the line of symmetry is (vertical or horizontal). As a class we will play the symmetry game on Topmarks. Chn from all ability tables to be targeted.

MATHS PLAN (TIME)

Date: 27/04/2015	Class: Year 2	Unit: Time	Term: Spring 2
Mental Oral objective: Display a variety of 2 digit numbers on the IWB. On w/b's chn to halve and double the numbers using previously taught strategies.	**Consolidation of previous learning/ knowledge/skills:** Building on the children's knowledge of telling the time. Chn to consolidate their understanding of the 'small' and 'big' hands and their significance. Chn to also consolidate their knowledge of o'clock and half past times.	**Teacher focus group:** **SEN:** Chn to move around the building and locate the school's wall clocks. Chn must read the times displayed on the clocks before writing them in their exercise books.	**TA group:** **HA:** Chn to participate in a time trail inside and outside the school building. Chn must find a variety of time clock cards, read the time and then record in their exercise books (focus on reading times to the nearest minute).
Lesson objective: To be able to tell the time to the nearest 5 minutes (SEN.BA). To be able to tell the time to the nearest 5 minutes, including quarter to/past the hour (A). To be able to tell the time to the nearest minute, including quarter to/past the hour (HA).	**New skills/Knowledge/vocabulary:** Developing children's understanding and knowledge of more complex times. Chn to also develop an understanding of 'quarter to' and 'quarter past' terms.	**Independent groups:** **BA:** Chn to move around the building and locate the school's wall clocks. Chn must read the times displayed on the clocks before writing them in their exercise books. **A:** Chn to participate in a time trail inside and outside the school building. Chn must find a variety of time clock cards, read the time and then record in their exercise books (focus on quarter to and quarter past times).	
Teaching Input: - Recap with the chn how many seconds are in a minute, how many minutes are in an hour etc. - Display a large clock on the IWB and move the hands to make different times, (o'clock and half past times). Encourage the chn to read the time. - Teacher to then discuss with the chn 'quarter to' and quarter past' times, as well as reading the time to the nearest minute. - Provide chn with mini clocks, teacher to call out a time and chn to show on their clocks.	**Reading opportunities:** Chn to read the PowerPoint and the times displayed on the clocks. **ICT opportunities:** Interactive whiteboard.	**Resources:** Outdoor environment. Interactive whiteboard. Wall clocks around the school. Time trail cards.	**Plenary/Assessment activity:** Display two clocks on the IWB, each clock to tell a different time (2:15 and 2:35). Chn must read the times correctly and try to calculate the difference between the two. Repeat the process with a further 2 examples.

Time Lesson