Medium Term Planning Maths – Sorting and Classifying

Medium -Term Planning 'Maths Map' Are you properly equipped for your journey yet?	Sorting and Classifying
End destination – Children will be able to sort and classify objects or numbers using one or more common attributes. They will be able to suggest reasons for their decisions.	

1. **Check Your facts** Subject knowledge References:	2. **Secure Your Expert Language!** Key language AND definitions so everyone is consistent.	3. **Predict the Hazards and Opportunities!** Identify the misconceptions and remember these are VERY valuable teaching opportunities.
Karen Wilding www.eymaths.co.uk First Maths Glossary DK – page 28-29 (comparison) Learning trajectories – Classification and Data Analysis Classification and Data Analysis (learningtrajectories.org) And Comparing Numbers Comparing Number (learningtrajectories.org) Big Ideas of Early Mathematics- Erikson.	**Sorting** - arrange a group into a specific way – with a common attribute **Set** – a group of objects which have a common attribute **Classifying**/Classification – The identification of an object by specific attributes, such as colour, texture, shape or size **Equal** - ___ is equal to _____ 'being the same in quantity, size, degree or value Harris(2013) Classifying and sorting involves 3 steps 1.Children decide which characteristics to sort by 2.Children physically sort the objects	Help children to see that sorting is relevant and is meaningful by using it in routines and everyday life. e.g. tidying, snack time, recycling. Avoid overly directing sorting activities and using closed questions.

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Chapter 1 - Sets: Using Attributes to make collections

Erikson article about Sets
https://earlymath.erikson.edu/modules/sets/?fwp_ formats=video&fwp_found=sets

Website on classification and sorting :
https://justifyingplaybased.weebly.com/classifying-- sorting.html

Some activity ideas for sorting
White Rose Maths – Just Like Me
https://whiterosemaths.com/resources/early-years-resources/reception-sol/

3.They can provide and describe their rational for their classifications

Erikson Big Ideas of Early Mathematics p.22 Table1.1. Sorting Progression
1.Exact matching
2.Sorting by a single attribute
3.Binary sort (red/not red)
4.Multiple set sort (sort by colour and then sort by size)
5.Compare sets- Which has more?

Big ideas about sets (Erikson):
Attributes can be used to sort collections into sets (e.g. colour, size, shape)
The same collection can be sorted in different ways.(red bears/blue bears big bears/little bears)
Sets can be compared and ordered. (There are more red bears than blue bears/ small -medium- big bears)

Suggested questions:
Can you find one that is the same as this/matches this one?"
Which ones belong together? Which ones are the same?
Which one does not belong here? Which one is different? Which ones are similar?
What else would go in this group/set? What is the sorting rule? How did you sort them?

Use "more/fewer" (not less) when comparing sets of objects.
Encourage children to subitise smaller groups of objects.

Develop noticing skills to enable children to look more closely at the objects they are sorting.

Ensure children justify their reason for classifying the objects in a specific way.

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4. **Identify Your 'Vehicles/Hooks'** What have the children shown you they are interested in that you can use to engage their interest and build upon what they already understand?	5. **Build Essential Connections!** Which other existing mathematical tools will they need to bring out and use here? Make these neutral.	6. **Sharpen Those Tools!** List the activities that will give children the opportunity to focus upon and become skilful in using specific tools. Use hyperlinks, images of tasks, book names and page		
- Filling containers - Stacking blocks and objects - Sorting loose parts and natural objects - Sorting land/sea animals - Tidying up – matching objects to the shelf shadows - Story voting – using ten frames	- Noticing similarities and differences (link with UW) - Comparing and using language relating to size, colour, length, shapes etc. - Making decisions - Explaining choices - Subitising - Comparing- Which group has more/fewer? - Problem-solving	Sorting natural objects		
		Online Sorting games	Sid the Science Kid . Games . Sorting Box | PBS KIDS	
		Loose parts and everyday resources		

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7. 'Concrete' Experiences 'Walk the Walk'	8. Creating Representations 'Capture the experience using an Image!' (Pictorial)	9. Translate the Experience into 'Abstract' Symbols
'They need to hold the maths in their hands before they can hold it in their heads'. Plan the hands-on experiences. Move from 'Real World' to 'Maths World'.	Capture the experiences using meaningful and generalised representations.	How are these experiences recorded using mathematical words and symbols?
Concrete real world Concrete maths world	Pictorial Real World Concrete maths world	

End Point - What do I want the children to understand and be able to do? Long Term aims for sorting and classifying – Nursery/Reception

- Children choose their own common attribute and sort resources
- Children sort objects using given criteria
- Children hone their noticing skills in order to find common attributes
- Children notice similarities and differences
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Characters of Effective Learning – How do young children learn best?

Playing and exploring – engagement	Active learning – motivation	Creating and thinking critically – thinking
Finding out and exploring	Being involved and concentrating	Having their own ideas
Playing with what they know	Keeping trying	Making links
Being willing to 'have a go'	Enjoying achieving what they set out to do	Choosing ways to do things

Children's interests – What are this group of children motivated by? What areas interest them? How are these children engaged in their learning? What do they love to do? When are they at their most happiest?

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Steps needed	Adult led/provocations/enhancements	Continuous Provision areas