

Egg Boxes

The 'Egg Box' is a concrete resource in the shape of a Tens Frame that can be filled with counters/cubes/discs or any small object (buttons, Compare Bears, raisins, sweets etc.)

Tens Frame 'Eggs'pertise

The advantage of the Egg Box over a laminated Tens Frame (especially within Early Years), is the way in which it 'holds' the objects securely. They can still be moved/ added to/rearranged but won't slip off or move out of their section until someone physically moves them. The more young children use the Egg Box image (daily/weekly), the more secure their conceptual understanding of small numbers will become. Over the course of the year there should be a gradual development from random cubes strewn on the table/ floor towards a series of arrangements of different numbers held within the Egg Box. These would initially be presented in a very structured 'conventional' way and would then move towards a greater depth of thinking where children are using their reasoning skills to display alternative arrangements.



The following activities introduce a range of different ways that Egg Boxes can be used. They are mainly hierarchical and are presented as separate activities, but in practice a teacher would often cover a range of different ideas within a single session, depending on the nature of the focus for that lesson. There are so many ways in which Egg Boxes/Tens Frames can be used that staff who use them on a regular basis will soon begin to design and create their own bespoke activities that can be developed within EYFS settings and beyond. Many Egg Box activities can be done by the teacher holding up filled in Egg Boxes and asking the children to discuss or replicate them.



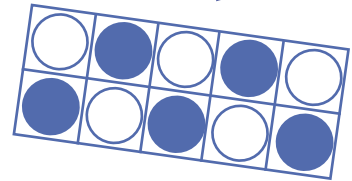
The best way to develop Egg Box understanding, however, is for the children to 'fill their frames', which usually begins with the Egg Box and can then be developed to much larger representations (cardboard boxes which can contain footballs/ teddies/ tennis balls/ cars/ Compare Bears etc.). The more that children 'fill a frame', the quicker they will begin to associate specific images with given numbers. They can also be asked to use their 'sense of number' and mathematical vocabulary related to position and direction/ ordinal numbers when explaining or describing where each of the cubes has been placed.

Children 'fill their frames' with small objects



Egg Box Activities

In general, children will participate in Egg Box activities before moving onto Ten Frames activities as it is important to work with concrete apparatus first and then translate this into a picture. As the year progresses the Egg Box and Ten Frame activities can be used concurrently as by this stage children need to be moving between concrete resources and pictorial images.

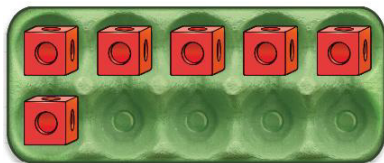


As the year progresses the Egg Box and Ten Frame activities can be

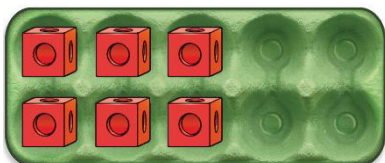
1 Arrangements

The most powerful initial use of Egg Boxes is to show how numbers can be arranged in a variety of ways, each of which allows you to explore the number and learn more about it.

The number 6, for example, could be viewed as a full row of 5 and a row of 1, (the traditional Egg Box image exemplified in Singapore). This is similar to our 'tally' charts / '5 and a bit' image, or how we usually demonstrate holding up 6 fingers.

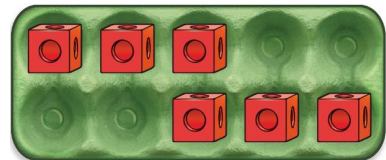


6 could also be arranged as a Tens Frame which looks like a traditional 'dice' array image.

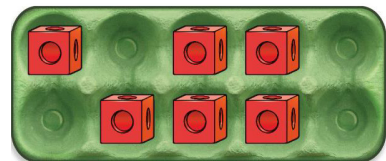


Alternatively, '6' can be laid out in other arrangements, still showing six 'ones', but in layouts which can be read / discussed in different ways. This can be created with one colour (for a simple picture) or with 2 / 3 colours to develop further mathematical language related to position, direction and ordinality.

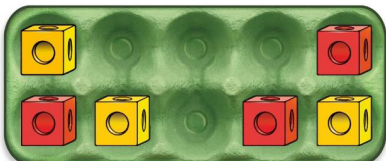
- The 1st image could be described as '3' on the top and '3' on the bottom, or as '2' + '2' + '2'



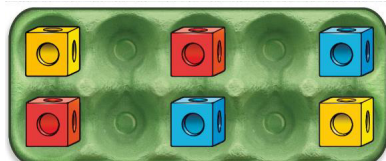
- The 2nd image is also '3' on the top and '3' on the bottom, but can equally be described as '1' + '5' or '2' + '4', depending on how the children view the image.



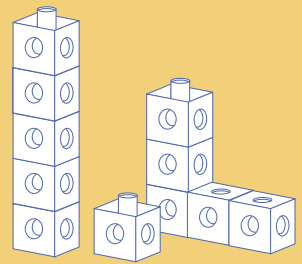
- The 1st image above could be '3' + '3' (the two 'Number Frame' shapes) or '3' + '3' (red and yellow). It can also be seen as 1 + 1 (top row) + 2 + 2 (bottom row).



- The 2nd image is clearly 2+2+2 (arrangement) but is equally 2+2+2 (colours). It is also 3+3 (top row and bottom row)



- All four images also clearly show that there are 4 'spaces' and that 6 (cubes) + 4 (spaces) = 10

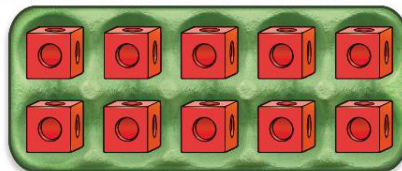


2 Make 10

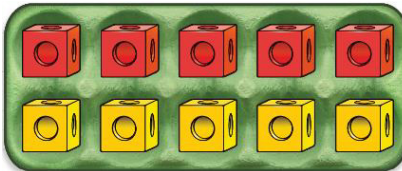
As mentioned, the most crucial feature of the Egg Box / Tens Frame is that it holds '10' objects. Once it is full (whether it uses a single colour or a mixture of colours), it allows the children to see specific things about the number '10'. All 6 boxes above allow the children to explore and discuss the number '10'.

- Most crucially is the feature which is true for every box – there are 10 Ones.
- Every full Egg Box will show both 1 Ten and 10 Ones.

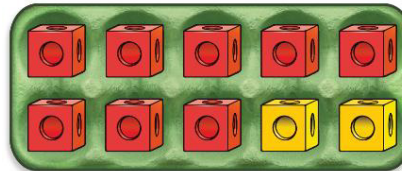
- In the first box (one colour) it can be described as 1 Ten, 10 Ones, 2 Fives (the rows) or 5 Twos (the columns)



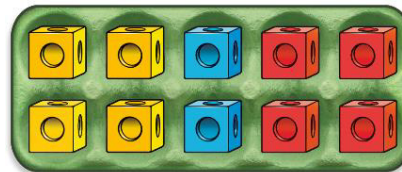
- The 2nd box also shows 1 Ten and 10 Ones but is more obviously $5 + 5$ (or 2 Fives)



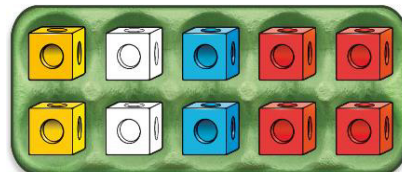
- The 3rd box also shows 1 Ten and 10 Ones but is more obviously $8 + 2$



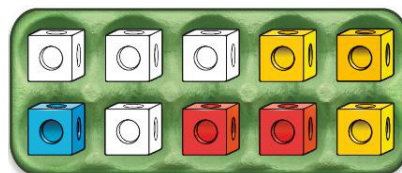
- The 4th box also shows 1 Ten and 10 Ones but is more obviously $4 + 2 + 4$ (or Double 4 + 2)



- The 5th box also shows 1 Ten and 10 Ones but is more obviously $2 + 2 + 2 + 4$ (or 3 Twos + 4)



- The 6th box also shows 1 Ten and 10 Ones but is more obviously $4 + 3 + 2 + 1$ (colours) The more experience children have with filling the Egg Box, the more they will understand different ways to see and make 10.



More Activities

1. The Great 10 Give-away

- Each player begins with one cube in each of their 10 egg box spaces.
- The object of the game is to get rid of all your cubes.
- Take turns to throw a dice and give that number of your cubes to any other player, who must add them to their box.
- The game continues until one player's egg box is empty.

2. Investigate

- How many ways can 5 eggs be placed in a 10 egg box? Is there any pattern in the number of possibilities? Children will learn they need to be systematic about how they think about/record the possibilities.

3. Amounts to 10

- Write the numbers 1 to 10 in the bottom of each egg space.
- Ask children to search for items to go in each one. It has to be the same item for each number, i.e. 1 egg, 2 pen lids, 6 beads etc. How large or small does each item be? The ones in the 10 space will need to be much smaller than 1 egg for example.

4. Practise times tables

- Write the answers to any of the times tables on small pieces of paper. E.g. 3 x table – 3, 6, 9, 12, 15 etc. Put one in each egg box space, out of order.
 - Call out the times table you wish to practise. You might do it in order first. Children should put a cube in the correct answers as you go.
 - As above, but put answers to your chosen times table in order and cover them up with a cube in each. Where will 3×3 be? What number will be under that cube? Children choose a cube and pick it up to check the number underneath to see if they are correct. If so, they keep the cube.

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