Appendix D

Counting in Fractions

First Class	$\frac{1}{2}$
Second Class	$\frac{1}{4}$
Third Class	$\frac{1}{8}$ $\frac{1}{10}$
Fourth Class	$\frac{1}{3}$ $\frac{1}{5}$ $\frac{1}{6}$ $\frac{1}{9}$ $\frac{1}{12}$

Counting activities should have:

- A lively pace
- Enthusiastic participation
- Two or three different short focussed activities (variety will maintain interest)
- Physical activity
- Choral response
- Individual response

There are many ways of counting in fractions which include:

Counting Stick

- Count in different fractions, for example, $\frac{1}{2}$, $\frac{1}{2}$. $\frac{1}{8}$
- Start at different starting points, count forwards and backwards
- Include mixed numbers and improper fractions, for example:
    - begin at one third, then count on by two third
    - begin at $1\frac{1}{2}$ and count on in $\frac{1}{2}$
- I need $1\frac{1}{2}$ metres of braid but my metre rules is in $\frac{1}{10}$ Count on the metre stick
- Name one end of the stick zero and the other end 10. Ask the pupils to estimate and give reasons for the position of $2\frac{1}{2}$, $6\frac{1}{2}$, 8, etc.

Stamp and Tap

Pupils find a space facing the board. Count forwards stamping feet in time. Stop at required number and turn in opposite direction. Now count back tapping their shoulders in time. (Do this without pausing!)

Human Number Line

Each pupil is given a large card with a fraction on it. Pupils are asked to line up from the smallest fraction to the largest. Teacher/pupil then discuss the order of the fractions, for example, before/ after, more than /less than/ same as, between, first/second, etc.

The Sound of a Number Game (Counting Can)

Teacher shows/tell the pupils the fraction of a unit being dropped into a tin. The pupils count silently in their heads as the teacher drops the fraction pieces into the tin. When the teacher stops, the pupil can call out the answer, or show its place on a number line. Teacher completes step one but this times ask pupils what fraction she/he would need to make 1 unit, 2 units etc. How many fraction pieces are in the tin, etc.

Feely bag Game

Place an even number of cubes in a bag, for example, 10. Tell the pupils you will give them half of the cubes in the bag. Count out five cubes. Ask the pupils how many cubes are still in the bag? How many cubes were in the bag at the beginning?

Stand and Sit Game

Pupils stand and then sit while saying the number sequence required, for example, Stand when our count is a whole unit. Pupils begin sitting and counting in quarters $\frac{1}{2}$ $\frac{2}{4}$ $\frac{3}{4}$ $\frac{4}{4}$ they stand and so on.

Count Around

Pupils stand in a circle and count around, each pupil saying the next number in the sequence. Start counting at $\frac{1}{2}$. The pupil who says number 2 sits down. Keep going until only one pupil is standing.

This could be differentiated in a number of ways including:

- using different fractions
- using different families of fractions
- using shorter/longer sequences
- using different starting/finishing points
- doing it backwards

Counting Choir

Divide class into 3 groups. Give each group a fraction out of the same family, for example, $\frac{1}{2}$ $\frac{1}{2}$.

Teacher plays the role of conductor with a baton. Teacher begins to count and then points the baton at one group to continue to count in unison. Teacher then points to a different group and continues.

Hand Game

Teacher picks a starting point, for example $\frac{3}{4}$. If teacher raises her/his hand up it means count $\frac{1}{2}$ more, if the hand faces down it means $\frac{1}{2}$ less.

A Fraction Wall

A fraction wall cut up into segments. Teacher hands out the segments to the pupils. The pupils put the fraction wall back together. Alternatively, a fraction wall with missing segments can be used. Pupils fill in the gaps on the fraction wall.

Guess my Number

I'm thinking of a fraction. It is between 0 and 1. The pupils then ask is it bigger than $\frac{1}{2}$? Is it smaller than $\frac{3}{4}$? Etc.

Target Boards

The Target Board is a very effective and versatile resource for mental / oral maths which can be placed on the whiteboard or wall. Each target board is a collection of numbers - in this case fractions. When using target boards encourage pupils to share their thinking and explain their mental methods. This helps pupils to realise there is more than one way to solve a problem. Explaining how you worked out something is a powerful way of learning. Examples of target board tasks for fractions include:

- Before/After, for example, what fraction comes 'after' X?
- Ordering from the lowest to the highest, for example, can you order the fractions on the second row?
- Estimation, for example, which column do you think has the greatest total?
- Count Forward
- Count Back
- Add the fractions in the first row

- Name two fractions that have the same denominator
- Name two equivalent fractions
- Name two/three fractions that are equivalent to one

Rope Activity

Stretch a skipping rope across the floor. Mark 0 at one end and 1 at the other end. Invite pupils to stand on or next to the rope to indicate positions of fractions, for example, $\frac{1}{2}$ a length of the rope or a $\frac{1}{2}$. Add an extra rope or two to extend the line to 2(3) so that the pupils can also represent improper fractions.

Comparing Halves:

Provide pupils with two different size wholes, each split into halves. Ask the pupils which half they would rather have? Discuss the difference between the halves and why one half is bigger than the other. Are they both halves? When can halves be different amounts?

The Frog and the Flea

A frog and a flea have a jumping competition. Each frog's jump was a $\frac{1}{3}$ of a unit long. Each flea's jump was $\frac{1}{2}$ of a unit long. The winner is the one who reaches four units in the fewest jumps. Predict who will win? Why? What if the distance was longer?

Number Line

1. Draw a number line on the floor. Mark units and half units/quarter units. Have the pupils jump in units, half units etc. counting as they go.
2. Pupils have a number line marked 0-1. Teacher calls out instructions, for example, put your counter on a fraction that comes just *before/after or on* any number *greater than/less than/ between*.
3. Empty number lines are also very useful, for example, in addition and subtraction of fractions pupils can represent the numbers to be added on the number line and this visual can help them with estimation.