# Assessing Counting and Calculation

The aim of this task is to build a rich picture of the skills in number and of your focus children so that this knowledge informs your Focus Children’s progress meeting (week 4) and informs your planning for the whole class. This task is essentially as for P1, except you can decide the exact number focus to concentrate on. You might want to assess your children's understanding of multiplication and division, for example. Remember, you will also be observing and assessing these children’s learning in mathematics through lessons you teach and observe.

In order to engage in participant observation with your own focus children, if it is possible for someone to observe this process in order to make detailed notes and to share in discussion afterwards, this would be useful.

For all tasks you should make notes and keep copies of any written or drawn work produced by the children (anonymise the work), when applicable, or other records of evidence e.g. photographs (you must not include faces of the children in your photographs.)

**Assess your children’s counting (especially Foundation Stage)**

You need things to count which the children enjoy using.

For each child, watch them counting:

* What strategies do they use?
* What kind of mistakes do they make?
* What do you think is the largest number of objects they can count accurately, and
* How did you find that out?

**To prepare for this task** refer to the EYFS documentation and National Curriculum (including the [Teaching Mathematics in Primary Schools guidance](https://www.gov.uk/government/publications/teaching-mathematics-in-primary-schools)) to consider your expectations. You should use relevant information from the university sessions on counting and consider any other short counting tasks that might be appropriate. You might want to discuss the task with your mentor before carrying it out, particularly with regards to working with the child with SEND.

**Reflect**

What have you learnt about assessing a child’s attainment in counting?

Consider [Kilpatrick et al’s 5 strands](https://www.nap.edu/read/9822/chapter/6) – adaptive reasoning, strategic competence, conceptual understanding, productive dispositions, procedural fluency. Reflect on the extent to which your focus children demonstrated evidence of these elements during this task.

**Assess your children’s calculating (KS1 and 2)**

Find the relevant ‘Number’ domain from the mathematics area of the National Curriculum for the children in your class and create some questions which you think they should be able to do. You should also use relevant information from the University sessions. [Consult the Teaching Mathematics in Primary Schools guidance](https://www.gov.uk/government/publications/teaching-mathematics-in-primary-schools) too. The document [Teaching children to calculate mentally](https://dera.ioe.ac.uk/778/1/735bbb0036bed2dcdb32de11c7435b55.pdf) from the National Strategies which is on the reading list, may also be useful, although check expectations against the National Curriculum.Discuss with your mentor how you might adapt the questions for the child with SEND.

Have manipulative equipment to hand (e.g. pennies, counters, tens and ones), whiteboard and pen and/or paper for the child to record onto.

For all children be prepared in case your children find the calculations you have chosen very easy or too difficult.

For each child ask questions one at a time (maybe have each calculation written on a card to show the child or write the calculation on a whiteboard) and allow them to choose how they solve these.

* Does the child use mental methods to answer each question, or do they use manipulatives, draw images or use ‘pencil and paper’ (informal or formal methods)?  Does this vary with different questions?
* If they use manipulatives, which do they choose to use and how do they use them?
* If they draw visual representations, which do they choose to draw and how do they use them?
* Can the child explain how they did each question?
* What strategies did they use?  How flexible, accurate, efficient and appropriate were these strategies?
* Consider – why do you think the child chose the strategies they did?
* Ask the child if they can make up a story using each calculation e.g. 4 x 5 =20 could be ‘Four people are all carrying 5 balloons. There are 20 balloons altogether’. You could model this for the child if they are unsure what you mean.

**Reflect:**

* Does each child use the same strategies?
* What have you learnt about assessing a child’s attainment in calculation?
* Consider [Kilpatrick et al’s 5 strands](https://www.nap.edu/read/9822/chapter/6) – adaptive reasoning, strategic competence, conceptual understanding, productive dispositions, procedural fluency. Reflect on the extent to which your focus children demonstrated evidence of these elements during this task.

**Where do you record this task?**

* Record the observation notes/assessments, your reflections and any evidence of the children’s work on these tasks in your Directed Tasks folder in your P1 OneDrive eportfolio.
* Summarise your observations and assessments (including from lessons you teach and observe) in preparation for your Pupil Progress meeting in Week 4 using the PowerPoint template. Think about how your subject knowledge from your reading and the mathematics sessions is informing your understanding of how children learn to count and how children develop Mathematical Proficiency. Think about how this information helps you to understand the children’s next steps.