# 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 begins to inform your planning for the whole class for the final weeks of your placement.

In order to engage in participant observation with your own focus children you should arrange for someone to observe this process in order to make detailed notes and to share in discussion afterwards. For most students this will be your placement partner or other student in the school. If you are the only student in a school you should ask another adult if they might be willing to do this for you.

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 and KS1)**

You need things to count which the children enjoy using.

Watch your first child at age-related expectations 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?

 Carry out the same task with the second child at age-related expectations. Does this child use the same strategies?

Finally carry out the same task with the child with SEND. Does this child use the same strategies?

**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. From the start of Year 2, it would also be appropriate to ask children to count in twos, fives and tens. Remember it is early in the school year, so consider expectations from the previous year group as well as the current year group. 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 write down four calculations (addition and/or subtraction) which you think they should be able to do. You should also use relevant information from the University session addition and subtraction. [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. **(Remember it is early in the school year, so consider expectations from the previous year group as well as the current year group.)** 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 e.g. 15 + 25 could quickly be simplified to 15 + 5 or extended to 15 + 37.

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?
* You could also ask the child if they can make up a story using each calculation e.g. 16 + 28 could be ‘If there are 16 counters in one tub and 28 in another there are 44 counters altogether’ or ‘16 people on a bus. The bus stops next to a school and 28 people get on. There are now 44 people on the bus’. 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 Planning and Assessment folder
* Summarise your observations and assessments 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 Maths 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.