Table 8.2 Collecting Observational Data

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| Numerosity | Number Order |
| * Can s/he recognise small groups without counting? * Does s/he have 1:1 correspondence? * Can s/he use known number facts to work  out others? | * Are numbers omitted or mis-sequenced when counting orally? * Can s/he order from smallest to largest? * Does s/he recognise simple number patterns? * Can s/he count on/back from a given number? * Is there a pattern to the counting errors? |
| Estimation | Number Facts and Procedures |
| * Does s/he make wild guesses? * Are estimates revised after counting  some items? * Does knowing the number of items in one group help them to estimate another group? * Can s/he round up or down? * Does s/he check their answer? | * Is the correct procedure used in calculations? * Can s/he read the number sentence  correctly? * Does s/he confuse similar looking symbols? * Is the mathematical language understood? * Does s/he lose track of where they are up to? * Does s/he know basic number facts or have to calculate them? |
| Calculation Fluency | Multi-digit Computation |
| * Can s/he complete the test given sufficient time? * Is the number of questions answered similar to peers? * Are more errors made when put under time pressure? | * Are digits written in the correct column? * Are numbers omitted from the calculation? * Can s/he read the numbers correctly? * Can s/he show the value of individual digits using base ten materials? * Does s/he use ‘marks’ when calculating? |
| Mental Calculation | Processing Speed (Number Fact Retrieval) |
| * Does s/he forget the question? * Does s/he give up in the middle of a calculation? * Is s/he slow to respond? * Is the correct procedure used? * Does s/he count on fingers to find solution? | * Is retrieval automatic? * Is ‘counting on’ used for simple number facts? * How accurate are the responses? * Are addition and subtraction facts confused? * Are multiplication and division facts confused? |
| Word Problems | Mathematical Reasoning |
| * Does s/he mis-read or omit words when reading the question? * Is the mathematical language understood? * Does s/he use the correct procedure? * Does s/he draw a model to find the solution? | * Can s/he generalise from one situation to another? * Can s/he see relationships between numbers? * Can s/he use inductive reasoning (e.g. to find the next number in a sequence)? * Can s/he use deductive reasoning (i.e. apply general principles to specific examples)? |