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?
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| 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?
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| 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?
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| 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?
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| 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)?
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