Teachers' notes: Coded tables

This activity is based on the multiplying tables. The numbers have been replaced by letters. Pupils will find the value of these letters by linking prior knowledge of the tables with underlying patterns unique to each table.

Equipment:

- **the coded table** (cut into 10 strips) *It is important that this activity is done practically.* ***Making the mathematics accessible to children with SEN is key; they can do more-complex maths if it is presented well*****.**
- a copy of the **multiplication tables** for comparison purposes. *Children will refer to this to compare patterns; frequent referral may also serve to aid memory*.
- Arrange the strips in line. As each is identified / de-coded move and arrange in correct order.

Some children will record findings on paper while others will do the task practically. Recording is not essential; what is important is the **dialogue between pupil and teacher** and **key questions** to prompt thinking, to get pupils to explain and to justify choices.

Probing questions:

To support children's learning and help when they become stuck, here are some questions you may consider using to prompt the next step.

- how many have a single-digit answer? *(This will identify whether it is "2 times", "3 times", "4 times" table, etc)*
- Which strip is the "1 time something"? How can you tell?
- Which is the "2 times", etc
- Can you find the "10 times something" strip? What number / letter does it end with? Are there any other strips in this table that end with zero? Which are these?
- Look for the strip where the letter / number is multiplied by itself. [**g x g =**]. How does this help?

After a few strips / numbers have been found.

- How many numbers / letters do we know now? *This can be asked at various times to collate progress. Children can use numbers found to help identify still-unknown numbers. The comparison set of tables is useful here.*
- You may probably find other useful prompts of your own.

The activity is best done in pairs, possibly with **TA support** to ask the questions. The dialogue will tell you much about the learning, misconceptions, etc and how you can offer interventions to secure new learning. Usually children will find the first one a challenge but are keen to try a new set of strips and will then ask their own questions.
Frequent use of these does improve retention....and it is fun!!!

Why not try to code the other tables. Ask pupils to do this and challenge partners to solve.