Addition, Subtraction, Multiplication and Division: Code Busters

Aim:	Success Criteria:	Resources:
Perform mental calculations, including with mixed operations and large numbers. I can perform mental calculations with increasingly large numbers.	I can partition numbers, adding the most significant digit first. I can add or subtract the nearest multiple of ten or 100 then adjust. I can identify near doubles.	Lesson Pack
Key/New Words: Multiple, add, plus, subtract, minus, take away, sum, total, nearest, partition, partitioning, repeated steps, mental, strategy, adjust, nearest multiple, doubling, halving, equivalent calculation, multiply, multiplication, lots of, groups of, divide, division.	I can multiply or divide using repeated doubling or halving. I can form an equivalent calculation to help me find an answer.	**Preparation:** Joins Activity Sheet – 1 per child Differentiated Code Busters Activity Sheet – 1 per child Extra Challenge Activity Sheet – as required Strategy Poster Pack – as required RUCSAC Display Posters – as required Blank ThHTO Place Value Chart – as required

Prior Learning: It will be helpful if children have a secure understanding of place value, multiplication facts and corresponding number facts.

Learning Sequence

Joins: Each child has their own **Joins Activity Sheet**. Inform children that they need to join any five numbers. Joins can go up, down or sideways. Ask children to find the highest possible score and the lowest possible score.

Coding: Revise mental strategies and the use of RUCSAC when solving word problems on the **Lesson Presentation**. Repeat with additional examples if necessary.

I Ain't Afraid of No Code: Using the **Lesson Presentation**, the children find out which word problem's answer fits the code. Can the children explain how they completed the calculation? Which mental calculation method did you choose? Did anybody use a different mental calculation method?

Code Busters: Explain to the children that they will be completing a range of questions that will require them to perform mental calculations using the strategies demonstrated earlier in the lesson. Individually, the children match the one-step word problems and coded answers using the differentiated **Code Busters Activity Sheet** Remind children to check their answers once the calculations have been completed. Support can be given through displaying **Strategy Poster Pack** and **RUCSAC Display Posters** around the classroom and/or on tables.

★ Children complete the activity by selecting and using an appropriate mental calculation method to answer the one-step whole number problems. Support can be given through the use a **Blank ThHTO Place Value Chart** for the children to make jottings on.

★★ Children complete the activity by selecting and using an appropriate mental calculation method to answer the one-step whole number and decimal problems.

★★★ Children complete the activity by selecting and using an appropriate mental calculation method to answer the two-step whole number and decimal problems. An **Extra Challenge Activity Sheet** is provided as an extension activity if required.

Code Red: Introduce the 'Code Red' game to the children where they need to describe a word or key idea from the lesson without using the given words. Select children to present their ideas to the class.

Masterit

Loopit: Let your children use their mental skills to complete these fabulous **Two-Step Word Problem Loop Cards**.

Answerit: Children have a go at answering the questions on this fabulous **Year 6 Calculation Mental Calculations Maths Mastery PowerPoint**.