

Addition, Subtraction, Multiplication and Division: Fun Factory

Aim: Identify common factors, common multiples and prime numbers. I can identify common factors.	Success Criteria: I know what 'common factor' means. I can identify common factors.	Resources: Lesson Pack Whiteboards and pens Sticky notes – one set per pair PE hoops or sorting hoops – two per pair Calculators
	Key/New Words: Multiple of, common factor, highest common factor, lowest common factor, HCF, LCF, greatest common factor.	Preparation: Factor Cards – one per class Common Factors Activity Sheet – one per pair Extra Challenge Activity Sheet – 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

	Multiple Splat: Split the class into two groups. Select a child from each group. On each slide of the Lesson Presentation , there will be a given number. The children take it in turns to select a number that is a multiple of the given number. For each number that is selected correctly, one point is awarded to the team. If an incorrect number is selected then a point is deducted from the team. For each slide, swap the children playing the game. <i>Were the children able to identify multiples of a given number? Did the children use any known facts to help them identify the numbers?</i>	
	What Is a Factor? Using the Lesson Presentation , explain what the term 'factor' means. Children explore factors of various numbers, e.g. their age, the year, phone numbers and postal codes using a calculator.	
	Number Factory: Give out the Factor Cards , one per child. Call out the number on the Lesson Presentation . Children who have a factor of the given number on their card stand up. Repeat with different numbers. <i>Are the children able to identify factors of a given number? Can the children identify factors that are present in two numbers (common factors)?</i>	
	What Is a Common Factor? Using the Lesson Presentation , explain what the term 'common factor' means.	
	Finding Factors: Children select two numbers from the slide on the Lesson Presentation . On the provided sticky notes, the children write the factors of each number, before sorting the numbers onto the Venn diagram (created by two hoops). This should allow children to see common factors. Repeat using two different numbers from the slide. You may wish to take photographs to record the children's learning.	
	What Is the Highest Common Factor? Using the Lesson Presentation , explain what the term 'highest common factor' means. Pose the question, 'Why don't we need to investigate the lowest common factor?'	
	Common Factors: In mixed-ability pairs, explain to the children that they will be completing a range of questions on the Common Factors Activity Sheet that will require them to <i>identify common factors including the highest common factor</i> , as demonstrated earlier in the lesson. An Extra Challenge Activity Sheet is provided as an extension activity if required.	
	Diving into Mastery: Schools using a mastery approach may prefer to use the following as an alternative activity. These sheets might not necessarily be used in a linear way. Some children might begin at the 'Deeper' section and in fact, others may 'dive straight in' to the 'Deepest' section if they have already mastered the skill and are applying this to show their depth of understanding.	
	Finding common factors of given numbers. Give a HCF and work out the number.	
	Odd one out factors - reasoning. Always, sometimes, never - a number always has two factor pairs. A number always has an even number of factors.	
	Problem solving - sorting/cutting things of different amounts/lengths into equal amounts/lengths.	



What Am I? Ask the children to think of two numbers and then write their highest common factor (HCF) and their lowest common multiple (LCM) on a whiteboard. Get the children to swap their whiteboard with a partner. Can their partner guess what their two numbers were?



Explore it

Roll it: Invite children to roll two dice to generate 2 two-digit numbers. The children write down the factors of each number, identifying any common factors.

Extend it: Children complete this fabulous set of [Prime Factors Activity Sheets](#).