Multiplication and Division: Dasher

Aim:	Success Criteria:	Resources:
Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates. I can solve speed, distance and time problems.	I can use scaling to solve problems. I can work out speed by dividing the distance travelled by the time taken to get there. I can calculate the distance travelled by multiplying the speed and the time taken to get there. I can calculate the time taken by dividing the distance by the speed.	**Lesson Pack** Dice

	Key/New Words:	Preparation:
	Speed, distance, time, multiply, divide, scaling.	Differentiated **Dasher Activity Sheets** – one per child **Masterful Multiplication** boards and dice per group

Prior Learning: It will be helpful if the children can use written methods for multiplication and division.

Learning Sequence

	Masterful Multiplication: In small groups, each with a **Masterful Multiplication** board, children roll a dice. They lift a flap with this number on and multiply their number with the number under the flap. The answer closest to 100 wins.	
	Dasher the Dog: Introduce Dasher the dog using the explanation on the **Lesson Presentation**.	
Whole Class	**Dasher Dilemmas:** Explain how scaling can be used to answer some problems, using the examples on the **Lesson Presentation**, e.g. if we double the distance we need to double the time taken. The ∗ group could begin their independent activity now.	
Whole Class	**Speed:** Introduce the formula speed (in metres per second) = distance (metres) ÷ time (seconds). Use the example on the **Lesson Presentation** to explore the concept of speed. Explain how to calculate the speed by dividing the distance travelled by the time taken.	
Whole Class	**Distance:** Use the **Lesson Presentation** to explain how to calculate the distance travelled by multiplying the speed by the time taken to get there.	
Whole Class	**Time:** Use the **Lesson Presentation** to explain how to calculate the time taken for the run by dividing distance travelled by the speed of the vehicle.	
	Dasher: Children complete differentiated **Dasher Activity Sheets**, solving speed, distance and time problems using scaling, multiplication and division. ★ Children solve Dasher the dog problems using scaling and supported speed (in metres per second) = distance (metres) ÷ time (seconds). ★★ Children use the formula speed (in metres per second) = distance (metres) ÷ time (seconds) to solve Dasher the dog problems. ★★★ Children use the formula speed (in metres per second) = distance (metres) ÷ time (seconds) to solve more complex Dasher the dog problems.	
	Switch: You have 60 seconds to explain to your partner how to calculate speed, distance and time. If you hesitate or say 'errr' or 'ummmm' then your partner must shout 'switch' and take over.	

Masterit
   Writeit: Children write a story about the adventures of Dasher.
   Shareit: Children design a poster to explain how to calculate speed, distance travelled and the time taken for journeys.

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