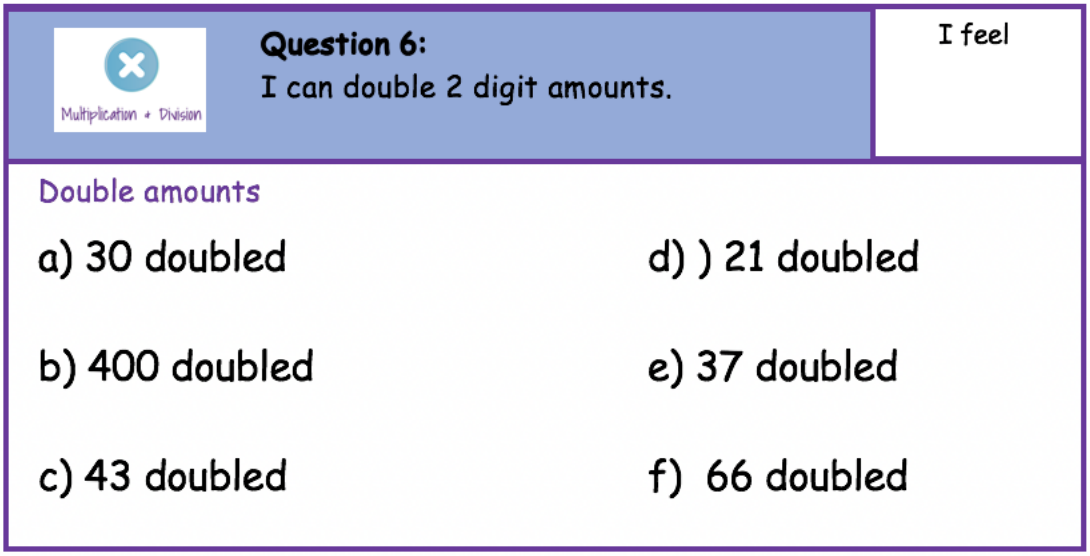
Multiplication Prior Learning Assessment Question 6:

Objective: I can double 2 digit amounts.

NCNMD 2:use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together three numbers

Assessment Question:

Prior Learning:

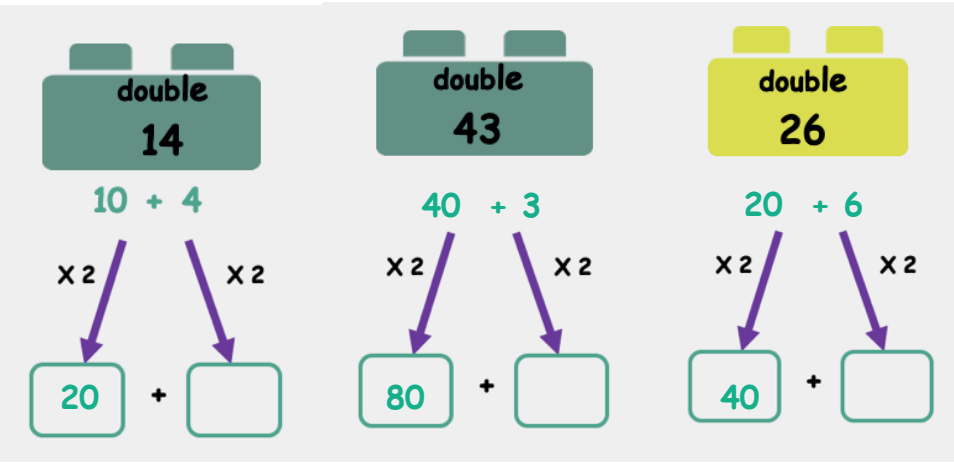


Teacher Input Ideas:

Ask the children the meaning of the word double. Encourage the children to explain the definition and to give examples of when doubling can be used. How can it help us to calculate?

Place the number 43 onto the board. Ask the children for strategies to double this quickly? What did they do? How did they tackle it?

Model to the children partitioning the number to help to double the tens and units separately. Model doubling amounts that are simple as a ten is not created when the units are doubled. Also model partitioning the amounts and combining when a new ten or hundred has been created as can be seen in the examples below.



Practice Activities

Purple Practice: Purple: most suited for children who need to secure using their knowledge of doubles to 20 to double multiples of ten and hundred, such as double 30, double 400.

For this activity the children are provided with amounts on blocks. The children can be presented with the sheet as it is or you may want to cut up the blocks so that the children can select different cards and turn it into a game with a partner. They can see if they can double the amounts mentally quickly using their knowledge of basic doubles.

Green Practice: most suited for children who made errors in Question 6 c and d and will benefit from doubling 2 digit amounts.

For this activity the children are provided with a scaffold to help them to partition the amounts into tens and units mentally and combine these back together. The children should be able to apply their previous learning of using timetable facts to double and multiply by ten. The last 3 questions require the children to double amounts that create a ten or hundred when either the ten or units are doubled.

Yellow Practice: Most suited for children that made errors with question 6 e and f and will benefit from creating a ten or hundred when doubling.

For this activity the children are provided with a scaffold to help them to partition the amounts into tens and units mentally and combine these back together. The children should be able to apply their previous learning of using times table facts to double and multiply by ten. For these questions the children are presented with amounts that create a ten or hundred when doubled.

Mastery: For this investigation, the children could be provided with a dice if they suggest this. Encourage the children to think of their own starting point, how to explore different options and how to record their results.

Key questions:

What are you being asked to find out? How will you find this out? Do you need any equipment? What do you know about dice? How many different options will there be? How are you going to record your working out and answers? What patterns do you notice? Which options can you rule out? How do you know this? Do any numbers give you the same answers? Why do you think that is

Answers :

Green:

double 13 = 26	double 14= 28	double 21 = 42
double 24 = 48	double 31 = 62	double 43 = 86
double 51 = 102	double 64 = 128	double76 = 152

Yellow:

double 17 = 34	double 18= 36	double 19 = 38
double 26 = 52	double 37 = 74	double 45 = 90
double 56 = 112	double 75 = 150	double 68 = 136

Mastery:

3 and 6

1= 2, 4, 8, 16, 32, 64 (128)	2 = 4, 8, 16, 32, 64 (128)
3 = 6, 12, 24, 48, 96	4 = 8, 16, 32, 64 (128)
5 = 10, 20, 40, 80	**6** = 12, 24, 48, 96

The children should have spotted that rolling a 3 or a 6 will be the best option, as when you keep doubling the amount, you get 96 and this is the closest amount to 100. Also, the children may be able to explain the pattern they have noticed between the numbers 1,2 and 4 and the numbers 3 and 6.

BRICKWORK Mathematics

Purple Activity

LO: I can double 1 and 2 digit amounts

double 1	double 10	double 100
double 2	double 20	double 200
double 3	double 30	double 300
double 4	double 40	double 400
double 5	double 50	double 500

BRICKWORK Mathematics

Purple Activity

LO: I can double 1 and 2 digit amounts

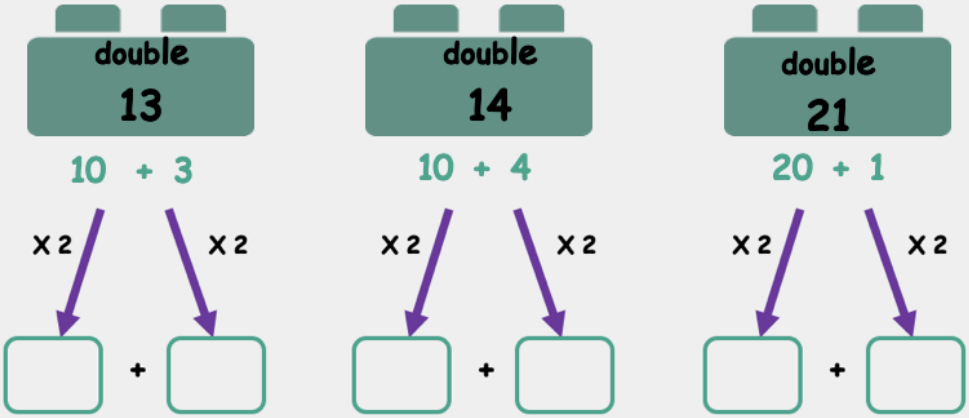
double 6	double 7	double 8
double 60	double 70	double 80
double 9	double 10	double 11
double 90	double 100	double 110
double 12	double 13	double 14

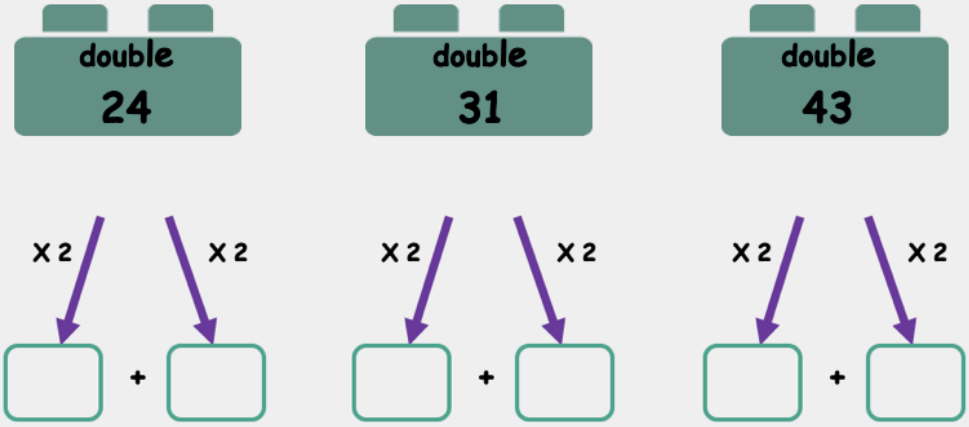
BRICKWORK Mathematics

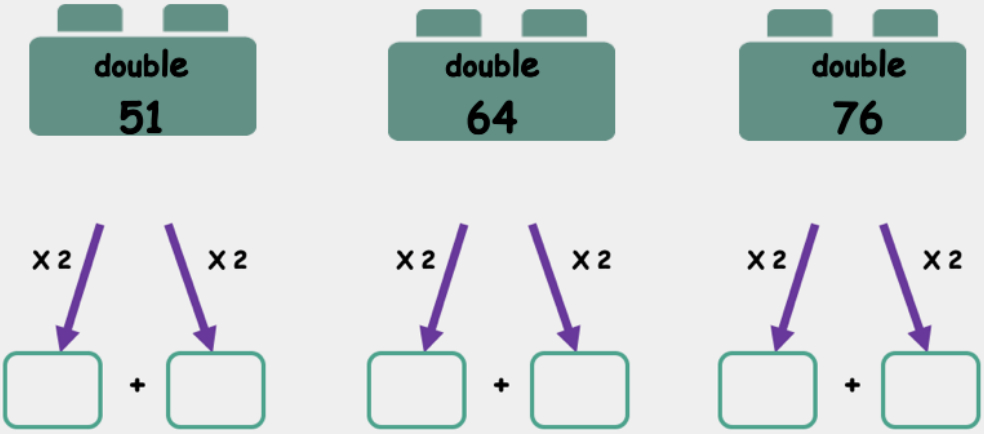
Green Activity

LO: I can double 2 digit amounts.

Double each amount below.







BRICKWORK Mathematics

Yellow Activity

I can double 2 digit amounts.

Partition the amounts to help you to double each 2 digit number.

double 17

10 + 7

x 2 x 2

□ + □

double 18

10 + 8

x 2 x 2

□ + □

double 19

10 + 9

x 2 x 2

□ + □

double 26

x 2 x 2

□ + □

double 37

x 2 x 2

□ + □

double 45

x 2 x 2

□ + □

double 56

x 2 x 2

□ + □

double 75

x 2 x 2

□ + □

double 68

x 2 x 2

□ + □

BRICKWORK Mathematics

Mastery

Investigation

Peter rolls a dice. He takes that number and keeps doubling it until he gets as close to 100 as possible.

Investigate which number on the dice will give him the closest answer to 100 when repeatedly doubled.

Key Questions:

- How will you find this out?
- How many different options will there be?
- What is the best way of recording your working out and answers? What patterns do you notice?
- Do any numbers give you the same answer? Why do you think that is?