



# Multiplication - Doubling

## 2.3.4

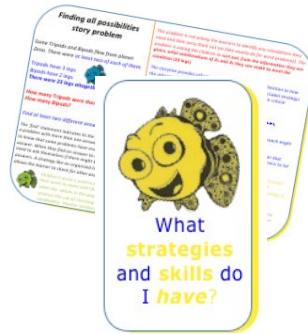
**Word Wall:** doubles, doubling, repeat, repeating, how many, share, sharing among, equation, sequence, array, pattern

### Introduction

Students will learn the effectiveness of being able to double.

### Resources

- Mini Whiteboard
- Whiteboard pens
- Counters
- Dominoes
- Doubles Poster
- FISH Kit



### Time / Classroom Organisation

Each activity process may be introduced in a small or whole group context. Allow 15---20 minutes for each part of this activity. Use every opportunity that arises to practice doubling.

### Australian Curriculum---Year level: Two ACMNA031

Recognise and represent multiplication as repeated addition, groups and arrays (ACMNA031)

### Proficiency Strand:

**Understanding** – connecting number calculations with counting sequences  
**Reasoning** – using known facts to derive strategies for unfamiliar calculations



### Activity Process---Double Stories

1. Ask students to recall their doubles that were taught in Year One (MAG 1.2.1). Use the doubles poster to help with students recall.



	1+1	Double 1	2x1	2
	2+2	Double 2	2x2	4
	3+3	Double 3	2x3	6
	4+4	Double 4	2x4	8
	5+5	Double 5	2x5	10

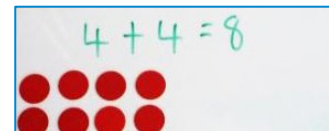
	6+6	Double 6	2x6	12
	7+7	Double 7	2x7	14
	8+8	Double 8	2x8	16
	9+9	Double 9	2x9	18
	10+10	Double 10	2x10	20

2. Provide each student with a mini whiteboard and pen. Give students a double story for them to answer. If students need they can draw a picture to help them answer the question. Possible Questions include:  
*If a starfish has 5 arms, how many arms will 2 starfish have?*  
*If a flower has 4 petals, how many petals will 2 flowers have?*
3. Now ask the children to write a doubling story problem that uses doubles. Ask them to share their problem with a friend and have their friend solve it.

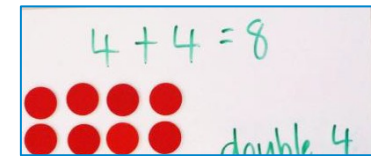


### Activity Process – Multiplication Facts -- 2

1. Together with the students recall all the double facts that they know.
2. Provide each student with a whiteboard, pen and counters.
3. Ask students to write 4 + 4 on their whiteboard. Ask students how they could use the counters to display the doubles fact. Encourage the use of arrays and ask students to display 4 + 4 in an array.



4. Explain to students that there is another way to write and describe the double 4 + 4. It can be written as 4 x (by) 4 as we have 4 counters by 4 rows. Allow students time to record their multiplication algorithm on their boards.



$$4 + 4 = 8$$

$$\text{Double } 4 = 8$$

$$2 \times 4 = 8$$

5. Repeat with all numbers to 10.
- Activity Process---Double Dominoes**
1. Give each group of students a set of dominoes, and ask them to put the tiles upside down.
  2. Tell the students to take turns picking a domino and finding the sum in any way they wish. If they pick a double (a domino with the same number of spots on both sides) they should write the equation it suggests, for example 2 x 2. If the 1le picked is not a double, it is simply removed from the pile and the next child draws.
  3. Play continues until all tiles are drawn. The winner is the child who drew the most doubles. As this game takes only a little time, the students may wish to play it more than once.



## Variations & Extensions

### 1. Doubles Jump

Resources: Concrete, Chalk, question cards

This maths game is a fun maths lesson that teaches the Doubles Facts. These number facts are essential for efficient mental computations. The aim of the indoor or outdoor game is to encourage 'automacy' in the recall of basic double facts.

Lady bird doubles game:

<http://www.maths-games.org/ladybird-doubles.html>



### 2. Doubles Snap/Fly swat/ Memory

Resources: Doubles poster cut into cards

Print, laminate and cut the doubles posters into cards. Use these cards to play snap, fly swat or memory.



### 3. Doubling Game

Resources: Dice, pen, paper

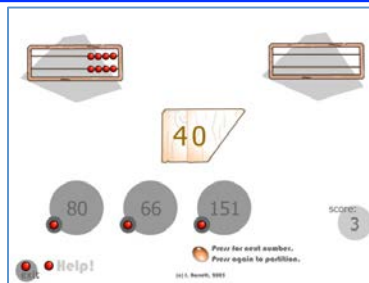
In pairs students take turns to throw a 1---6 dice. Write down the number you get. Double it and write down the answer. Take five turns each. The person with the biggest number wins; if there is a tie, the person with the smallest number wins.

Challenge: Double the Double



## Digital Resources

<http://www.ictgames.com/woodcards.html>



[http://edsen.com.au/pub/rqbvzzonjuqsgmzlv/Doubles\\_Bingo.pdf](http://edsen.com.au/pub/rqbvzzonjuqsgmzlv/Doubles_Bingo.pdf)



## Contexts for Learning

### Play:

Play shoot out/bang with doubles. Two students stand out the front of the classroom. The teacher calls out a number to be doubled and the first student to answer is the winner. Continue until all students in the class have had a go.

### Investigation:

Ask students:  $2 \times \square = \square$  Tell me how to make this true.

### Real life experience:

When opportunity arises to divide the class into two groups – use the language of half – and discuss strategies of how this can be done effectively.

### Routines and Transitions:

As students transition hold up a 1 – 120 card and ask students to double it.

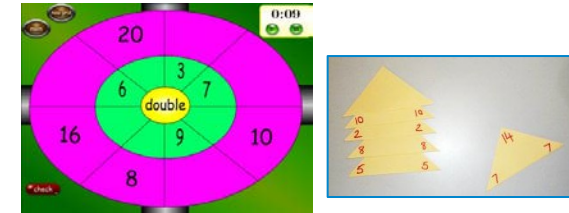


Adapted for use in the Cairns Diocese with the permission of the Catholic Education Office Toowoomba

## Assessment

<http://www.wmnet.org.uk/files/2ring-inputcentrev4.swf>  
<http://www.wmnet.org.uk/files/2ring-centrev4.swf>

Use the Target game below to assess students ability to work forwards and backward with doubling by filling in the spaces. or



Cut squares of paper in half to create triangles. Write the answer at the top of the triangle and the number that you are doubling in each bottom corners. Show students only the bottom to numbers and ask them to double, reveal the top of the triangle for the answer.

**Achievement Standard:** represent multiplication and division by grouping into sets

## Background Reading

Students are usually introduced to multiplication as 'repeated addition'. This requires a big shift in thinking from addition or subtraction. To interpret  $5+2$ , students can show five blocks and two blocks and then think about what the + means. .... However, for  $5 \times 2$ , the 5 and the 2 do not each refer to a number of blocks. One refers to a number of blocks, but the other refers to a number of sets of blocks. ....The notion that  $5 \times 2$  refers to five groups of two requires careful development.

Source: *First steps in Mathematics – Number – Understand Operations*, 2010. Rigby: Port Melbourne. p 28.

## Year three NAPLAN Numeracy test links

Multiplication and division – number problems  
 Multiplication and division – word problems

## Links to Related MAGs

1.2.1 – Addition and Subtraction Strategies.  
 2.2.6 – Multiplication – repeated addition  
 2.3.5 – Multiplication – arrays  
 2.4.5 – Multiplication – Solving Problems