



Number Sequences 2.1.1

Word Wall: pattern, skip counting, how many, less than, different, the same as, not the same as, more than, fewer than, less than, match, digit, altogether, number sentence, strategy, think, forward, backwards, (criteria, attribute)

Introduction

Students will practice skip counting in 2's, 3's, 5's and 10's from any number as a starting point.

Resources

- Building Blocks
- 100's Board
- Transparent counters
- Mini Whiteboards
- Whiteboard markers
- Early Years FISH Kit
- Count back clock-optional



Time / Classroom Organisation

Each section of the activity process may be introduced to a whole or small group. Allow 20-30 minutes for each activity. Repeat the activities on a regular basis, gradually increasing the size of the numbers used.

Australian Curriculum

Year level: Two

Investigate number sequences, initially those increasing and decreasing by twos, threes, fives and tens from any starting point, then moving to other sequences (ACMNA026)



Activity Process – Building Blocks 'FISH Strategy'

1. Challenge the students to **build the tallest tower** they can, using the **building blocks** in **one minute**.
2. When the minute is up – ask students to **count the number of blocks** in their towers.
3. Discuss: **Whose tower has the most/least blocks? How do you know?**
4. Repeat the activity but this time **each block is worth two points**. Ask students to total up their number of points. **Compare students' scores**.

Source: *Numbers and patterns: laying foundations in mathematics*. 2009. <http://nationalstrategies.standards.dcsf.gov.uk/>



Activity Process – Let's Add 10

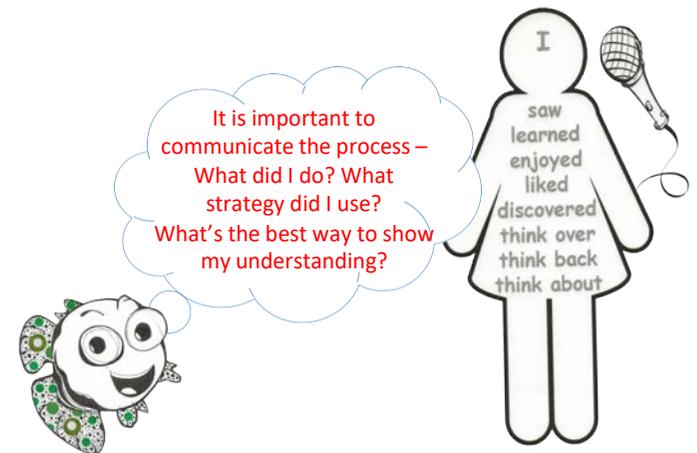
1. Give each student a 100's board and 10 counter.
2. Ask students to count in tens, starting at 10.
3. Ask students to put a counter on 10. Ask, "What is 10 more?" Allow students time to count along 10 space to 20.
4. Ask students to place a counter on 20. Continue in this way until you reach 100.
5. Repeat activity but this time start at 3. Ask, "What is 10 more?" Allow students time to count along to 13.
6. Ask students to place a counter on 13. Ask "What is 10 more than 13?"
7. Continue this way. Ask students to keep adding 10 each time
8. As students continue with their pattern ask them to write their answers on a whiteboard as they go.

Source: Linthorne, C. & Serenc, M. 2005. *Jigsaw Maths Teacher Resource Book 2*. Firefly Press: Buderim



Activity Process – Magic Number

1. The teachers selects a skip counting pattern to practice and two 'magic' numbers from that pattern.
2. Ask students to stand in a circle.
3. The teacher informs the students of the starting and the finishing number as well of the two 'magic numbers'.
4. Students count forwards and backwards between the starting and finishing number. If they are unlucky enough to say the magic number they will sit down and be out of the game.
5. For example: in the following game students are counting by fives, with the starting number zero and the finishing number of 50 and with magic numbers of 20 and 40. Students would start counting: 0, 5, 10, 15, the next student says 20 but sits down. The count continues so the next students would say 25, 30, 35 then the next student would say 40 and sit down. The count continues: 45, 50. As 50 is the finishing number then students would count backwards starting at 45, the next student says 40 and sits. The game continues in this way forwards and backwards between 0 and 50 until one child remains standing.



Catholic Education
Diocese of Cairns

Learning with Faith and Vision

Variations and Extensions



1. Number Strips

Resources: Number strips, 1-100 cards and whiteboard markers.
Write a counting sequence on the number strip, leaving a few numbers blank. Ask students to fill in the missing numbers.

2. Songs

Resources: Interactive Whiteboard or computer, internet
You tube song about skip counting in three.

<https://www.bing.com/videos/search?q=songs+about+skip+counting+in+threes&opvt=songs+about+skip+counting+in+threes&view=detail&mid=C4C66AE669E7AB8AA29&FORM=VRDGR>

Song title: Skip Counting by 3-multiplication – Lets Start Smart
<http://www.youtube.com/watch?v=4JH3258NS6M>



3. Buzz

Resources: A class of students.

Buzz: Decide which numbers will be the BUZZ number of the day, For example: 15, 50, 60 and write them on the board. Count in fives around the class. Counting would be 5, 10, BUZZ, 20, 25, 30, 35, 40, 45, BUZZ, 55, BUZZ and so on. Should a child give an incorrect number in the counting sequence or forget to say BUZZ they would be asked to sit out.

Challenge: When students know how to play the game well, you won't need to write the BUZZ numbers on the board – see if students can remember them.

Source: Linthorne, C. & Serenc, M. 2005. *Jigsaw Maths Teacher Resource Book 2*. Firefly Press: Buderim

4. Colour Skip Counting Chart

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

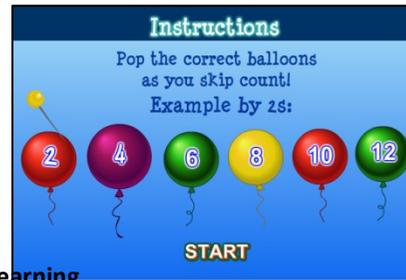
Resource: <http://www.mathsisfun.com/numbers/number-chart.php>

Interactive Whiteboard Resources

<http://www.free-training-tutorial.com/skip-counting/skip-counting-by-threes-space-needle.html>



<http://www.free-training-tutorial.com/skip-counting/skip-counting-by-twos-washington-monument.html>



Contexts for learning Play:

Dot to Dot: Students complete dot to dot puzzles that skip count in 2's, 3's, 5's and 10's.

http://www.education.com/worksheets/dot-to-dots?utm_source=bing&utm_medium=cpc&utm_term=dot+to+dot&utm_content=New+Crack+The+ADot+to+Dot%3ABroad&utm_campaign=BING%3AAUS%3AGENERIC%3A%3A%3A%3AWORKSHEETS%3A%3ASEARCH%3A%3AD%3ALEAD&gclid=CKG9h-t0c8CFYU8vAodgKkInAKgdsrc=d

IXL Maths sheets: <https://au.ixl.com/math/year-2>

Investigation:

'think aloud' model

Picture Puzzles: Ask students to draw a picture to solve a problem.

For example:

1.5 boys each collected 3 rocks. How many rocks were there?

2.7 chickens each laid 4 eggs. How many eggs were there?

3.10 clowns each had 5 balloons. How many balloons were there?

Real life experience:

• **Counting Money:** Use five and ten cent pieces to count in 5's and 10's.

Routines and Transitions:

• **Count Off:** As students walk out the door to lunch ask them to count off in a number sequence of 2's, 3's, 5's or 10's.

Assessment

- use the terms 'more than' and 'less than' to compare numbers
- count forwards and backs by twos, fives and tens
- count forwards and backwards by tens with two and three digit numbers
- use a hundreds chart to identify number patterns

Background Reading

Within a mathematical context, to describe a number pattern means to provide an unambiguous rule or relationship that produces it. Students should be able to follow rules provided by others, create rules for themselves and produce rules that fit the information provided.

There are some conventional mathematical types of rules that students should begin to use in the primary years.

For example:

- Sequences of numbers can be described by giving a rule that says where to start and how to get from any number in the sequence to the next one. For example: Start with seven. Each number after that is five more than the one before (7,12,17,22....)
- Sequences of numbers can also be described by giving a general rule that says how to work out any number in the sequence by knowing what its position in the sequence is. For example: Each number in the sequence is two added to five times its position (7,23,17,22....)
- Other patterns can be described by rules that say what the general relationship is between quantities. For example: The area of a square is the square of the length of its side.

Source: *First steps in Mathematics – Number: Operations/Calculate/Number Patterns*, 2010. Rigby: Port Melbourne. p224

Year three NAPLAN Numeracy links

2010 Question 14 – Identifies the missing shapes in a repeating pattern.

2009 Question 2 – Selects the next term in simple visual number pattern.

Links to other MAG's

2.1.6 Number Patterns

2.3.2 Number sequences 2

2.3.7 Number Patterns – missing elements

Links to other Resources



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