



Number Lines

P.4.7

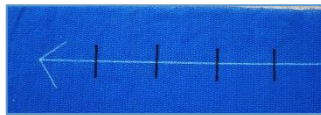
Word Wall: number names, random, pattern

Introduction

Students will make and explore the number line to 20.

Resources

- Early FISH
- Number Line
- 1 – 20 numeral cards
- Birthday cards
- Foam Numbers
- Number Ladder
- String
- 30 ml cups



Time/Classroom Organisation

This activity may be introduced in a small group or whole group as a 20 minute focused teaching and learning event. Students should also be given opportunities to play with the resources to create their own number line games.

Australian Curriculum Prep

Compare, order and make correspondences between collections, initially to 20, and explain reasoning (ACMNA289)

Represent practical situations to model addition and sharing (ACMNA004)

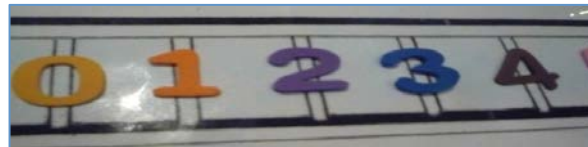
Proficiency Strand:

Problem Solving – discussing the reasonableness of the answer

Reasoning – explaining processes for indirect comparison of length

ActivityProcess---Making Number line.

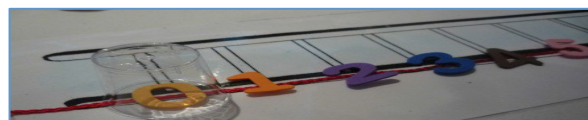
1. Ask students to turn the number ladder sideways.
2. Students are to place the foam numbers 0 – 10 in the middle of each rung on the number ladder.



3. Place a piece of string across the bottom of the number ladder. Ask students to move the foam numbers down onto the piece of string but keeping the spaces that are between the numbers the same.



4. Give each student a 30ml cup. Ask them to place the cup over the numeral 0. Use the cup to assist students in exploring the number line. Ask students to use the cup and hop forward one number, then hop forward two numbers, hop back 3 numbers and so on.



Source: E deVries & E Warren, 2011. *Building Mathematics in the Early Years*. Oxford University Press: Melbourne.

ActivityProcess---Numbers Line to 10

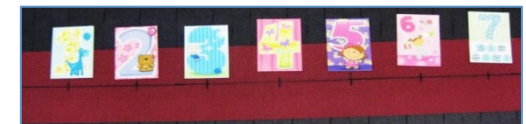
1. Roll out the number line.
2. Provide students with an assortment of birthday 1 – 10 or numeral cards 1 – 10.
3. Talk to students about a number line and place the number 3 card in the correct place.



4. Ask the students:
What number comes after 3?
What number comes before 3?
5. Invite the students with those numbers to come and place their number cards on the number line.



6. Bring out each number between 1 and 10 in random order. If the students do not place the card directly under the pre marked partitions discuss with them that the card must align with each marking.



Source: Rosemary Irons, 2011. *The Expert Series*. Origo



Catholic Education
Diocese of Cairns

Learning with Faith and Vision

Variations & Extensions

1. Timeline

Resources: Number Line, numbers, paper, pens
Create a number line with the hours that students are at school. Ask students to draw pictures of the main events of the day and place them appropriately on the number line.



2. Guess the Secret Number

Resources: Number Line, numbers
Create a number line together with the class. Send three children to the corner so they cannot see. Point silently at one number on the number line. Check that everyone in the class has seen the secret number that you have pointed to. When the three children return they have to guess the secret number. They may ask one question each. Encourage them to ask questions such as:

Is the number larger than 5? or Is the number smaller than 10?

After each student has asked one question each they can have a minute to compile a joint guess before they reveal what they think the Secret Number is.

3. Counting Round

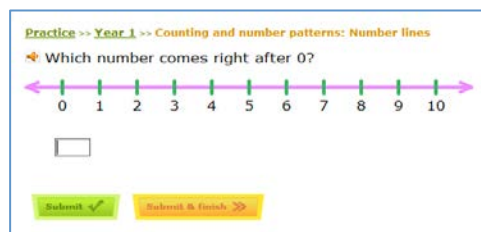
Resources: Number Line, echidna's with numbers 0 – 20 written on them.

Ask students to count out loud around a circle, each saying one number. Every two or three numbers stop the count and ask the students who said the last number to go and collect the echidna from the number line. Continue counting. When you reach the last number on the line, start again at the first number and continue counting. Keep stopping every three of four numbers to make a student go and collect an echidna.

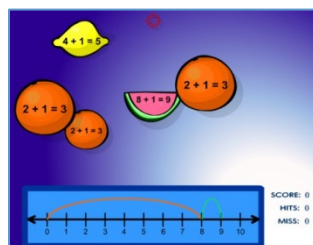
When all the echidna's are collected, count in unison and each student puts their echidna's back on the line as the class says it's number.

Digital Resources

<http://au.ixl.com/math/year---1/number---lines>



http://www.sheppardsoftware.com/mathgames/integer/s/FS_Integer_addition.htm



Contexts for Learning

Play:

Create class time lines for projects and class activities.

Investigation:

Create a number line 0 – 10. Then create part of a number line 11 – 20. Discuss what is the same/different about the two.

Real life experience:

Daily read the temperature on a thermometer.

Routines and Transitions:

Have a number line on display in the classroom (available at <http://www.senteacher.org/print/mathematics/>)

As a class count along the number line and count backwards. Select a different student each day to point to the numbers with a wand as they are spoken.

Assessment

Roll out the number line and place the digits 0 and 10 on it. Give the students any random number that would appear on the number line and ask them to place it in its correct position. Ask students to explain their reasoning for placing the number in that position.

Achievement Standard: count to and from 20.

Background Reading

On a number line, numbers are represented as points and distances. Number lines are useful because they provide a linear representation of all numbers, in order of size. They can represent whole numbers, negative numbers, fractions and decimals and irrational numbers, all on one diagram. They are also useful to model some number computations, especially for addition and subtraction.

Scales on instruments such as thermometers are examples of number lines, so reading a number line has practical use. Graph axes are also number lines, and so understanding number lines is important for more advanced mathematics, not just as a tool for teaching.

Source: Department of Education and Early Childhood Development, Victoria. 2009. *Number lines with whole numbers*. Department of Education: VIC.

Links to Related MAGs

P.3.4 – Hanging Geckoes

P.4.2 – Number Ladder

1.2.2 – Hanging Geckoes

1.3.3 – Area to Linear