

3.3- Intervals and Inequalities

Learning Intention:

Today we will represent an inequality in three different ways.

Success Criteria:

- 1) I understand the vocabulary for inequality signs, and can write an inequality with the correct symbol.
- 2) I know when to use open vs. closed brackets with interval (bracket) notation
- 3) I know when to use open vs closed dots on a number line
- 4) I can write an interval in set builder notation.

Place the Following On Your Chart

Greater than or equal to	Less than
Less than or equal to	Greater than or equal to
At least	A minimum of
A maximum of	No more than
More than	No fewer than
Minimum value of	At most

Testers: Write the following as an inequality in the correct box

1. A number greater than 5
2. A number that is at least 21
3. A number no more than -6
4. A number less than 8



VOCAB LIST FOR INTERVALS

>

GREATER THAN

<

LESS THAN

\geq

GREATER THAN OR EQUAL TO

AT LEAST

MINIMUM VALUE

NO FEWER THAN

LESS THAN OR EQUAL TO

\leq

MAXIMUM VALUE

AT MOST

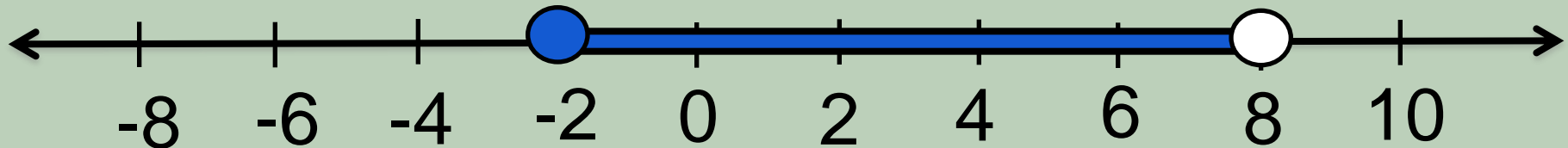
NO MORE THAN

Sometimes it is useful to talk about a **RANGE** of numbers.

Ex: I can plant tulips in the Fall when the night time temperature is greater than or equal to -2°C and less than 8°C .

There are **3** ways to represent a range of numbers:

1) Number Line



- Identifies the interval of numbers
- The end number **IS** in the set
- The end number **IS NOT** in the set

2) Bracket Notation

$[-2, 8[$

Lowest # Highest #

$[-5, 7]$ ❤️

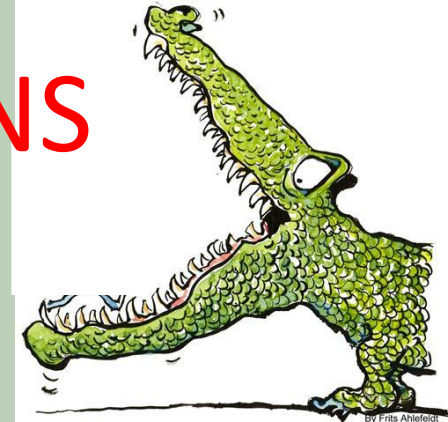
HUGGING brackets mean the end number it is **CONTAINED** in the set.

$]5, 9 [$ 🐶

BACK FACING brackets means the end number is **NOT CONTAINED** in the set.

Eg. 2 Inequalities Language

The mouth always **OPENS**
to the larger number.



Less than 5

$$x < 5$$

Greater than 10

$$x > 10$$

At Most 22

$$x \leq 22$$

At Least 15

$$x \geq 15$$

3) Set Notation

$$\{ x \in \mathbb{R} \mid -2 \leq x < 8 \}$$

x is a real #

Lowest #

Highest #

✓ Check

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