

NUMBER LINES

MINI-LESSON

For the Number Lines key concept



Summary

Students will examine number lines that have errors as a way of identifying what features are important in a number line.



Suitable for 2-6 students



Length 30 min (approximately)



Lesson Preparation

- Print **Teacher Handout** ([download](#)) – one teacher copy
- Print **Student Handout** ([download](#)) – one per student
- Print **Number Line Photos** ([download](#)) – one teacher copy
OR collect other real world examples of number lines
- **Scissors** – to cut up the Number Lines in the Student Handout prior to the lesson

LEARNING INTENTIONS

This activity helps students to:

- Understand how numbers are ordered and spaced on number-lines.
- Interpret number-lines used in real world contexts.

CURRICULUM LINKS

- Read and construct number lines with smaller numbers and skip counting by 2, 5 and 10 (ACMNA013)
- Read and construct number lines up to 1 000 (ACMNA027)
- Read and construct number lines up to 10 000 (ACMNA052)
- Read and construct number lines up to with larger numbers (ACMNA072)

AFTER THE LESSON

In later lessons, students can practise drawing sketches of number-lines. The value of this is in identifying ways to divide up line segments into equally sized parts.

INTRODUCTION**5 MINUTES**

Explain to students that in this activity they will be exploring number lines.

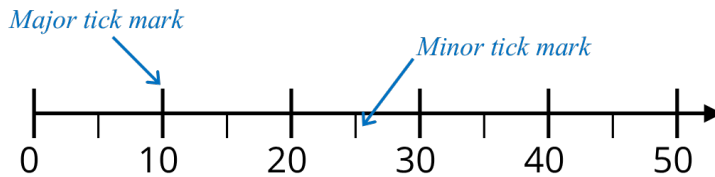
Invite students to briefly share what they already know, by asking: *What facts can you tell me about number lines? What do you not see on a number line?* Write these ideas under Facts and Non-Facts on the *Teacher Handout*.

Whole group:
Sharing ideas with the group.

INTRODUCTION**5 MINUTES**

Show students Number Lines #1 and #2: #1 is an example of a good number line, and #2 has errors. Number Line #1 is good because:

- The numbers are in order
- The tick marks are evenly spaced
- The numbers go up by even amounts at the tick marks



Ask students: *What is wrong with Number Line #2?* [Answer: numbers do not go up by even amounts at each tick mark. That is, it does not show skip counting.]

Whole group:
Listening.
Explaining what is wrong with Number Line #2.

DIRECT PAIRS OF STUDENTS**15 MINUTES**

Give each pair of students a set of cards. For each number line, students need to identify the errors that have been made. Note that *two* number lines do not have any errors.

Prompt student thinking: As students work, provide prompts as appropriate, e.g.:

- Use the Number Line Facts and Non-Facts as a guide for helping to identify errors.
- Provide a 1-100 grid to help with skip counting.
- Re-draw the number lines so that they do not show errors.

In pairs:
Identifying the errors in each number line, and the two number lines that are correct.

DISCUSSION**8 MINUTES**

Go through the answers as a group, and check that there is agreement on each solution.

As a final activity, invite students to look at and discuss real world examples of number lines. Present them with the Number Line Photos (or other number lines that you have found), and ask:

- What does this number line measure?
- What are the numbers (i.e. major tick marks) on this number line going up by? Why do you think skip counting by this amount was chosen?
- Can you work out how much each minor tick mark is going up by?

Whole group:
Discuss solutions.
Examine and discuss what is on real world examples of number lines.