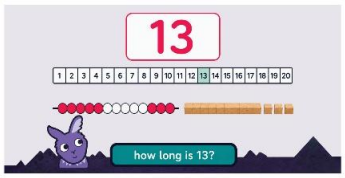


INSTRUCTIONAL GUIDANCE: MAGNITUDE ESTIMATION

Explicit instruction routines

Learning intention

We are learning to reason about the relative value, position, and distance of numbers.

Success criteria

- I can compare numbers using size, order, position, and distance.
- I can use linear representations to show which numbers are larger, smaller, close together, or far apart.
- I can use endpoints, benchmarks, halfway points, and nearby tens to help estimate where numbers belong.
- I can explain why a number belongs in a particular position.

Using these routines across Foundation and Year 1

ENSSA assesses this skill through the Number Line Estimation task, where students estimate where a number belongs on a bounded number line.

Foundation

Students work with numbers to at least 20. Begin with concrete and visual linear representations that make magnitude visible, such as cube trains, rows of counters, bead strings, number tracks, and number paths. Students should compare, order, locate, and explain numbers using language such as more, less, before, after, closer, further, and halfway.

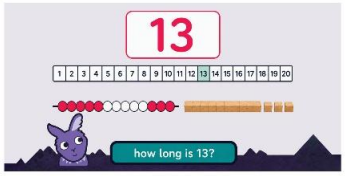
Year 1

Students extend this reasoning to numbers to at least 100. Continue using number tracks, number paths, hundreds charts, Base-10 materials, and bounded number lines to support students to use endpoints, halfway points, decade numbers, nearby tens, and relative distance when estimating where numbers belong.

The routines are cumulative. Year 1 students may still need review with physical or visual linear representations before estimating on a 0–100 number line.

Explicit instruction routines

Context and Presentation	Teacher Modelling	Guided Practice / Correction Routine	Supported Independent Practice
Comparing quantities using objects in a line Build two quantities as cube trains, rows of counters, bead strings, or Base-10 lengths. Line up the starting points. Example: compare 5 and 9, then 8 and 13.	"I will build 8 and 13 using cube trains. I need to line up the starting points so I can compare the lengths." Build and align both trains. "The train of 13 is longer than the train of 8. That means 13 is larger than 8." "I can also see the distance between them. 13 has 5 more cubes than 8."	Students build 12 and 17 using cubes, counters, or a drawn linear model. Ask: "Which quantity is larger? How do you know? How many more does it have?" Correction: If students compare inaccurately, check the representation: "Are both quantities starting in the same place? Are the objects touching or evenly spaced? Which quantity extends further?"	Students compare pairs such as 6 and 9, 14 and 18, or 25 and 52, using a linear representation. Students explain: "___ is larger than ___ because the train/line is longer." Fade from physical objects to drawn bars, marked paths, or numerals with representations used to prove thinking.
Moving along a number track or number path Use a physical floor track, desk	"I start on 6. I am going to jump forward 3 spaces." "I do not count the space I am standing on. I count each	Students start on 4 and jump forward 5 spaces. Ask: "Where did you start? How many spaces did you move?	Students complete movement tasks using a floor track, desk path, individual number track, or counter.



Explicit instruction routines

number path, or displayed number track. Students start on a number and move forward or backward. Example: start on 6, jump forward 3.	jump." Move and count: "1, 2, 3. I land on 9." "I started at 6 and jumped 3 spaces to land on 9."	Where did you land?" Correction: If students count the starting number as the first jump, model again: "You are already standing on the start number. The first jump lands on the next space."	Examples: start on 3 and jump forward 4; start on 8 and jump backward 2; start on 10 and jump backward 5. Students say: "I started at ___ and jumped ___ spaces to land on ___."
Comparing numbers using position on a number path Display a number path or number line with target numbers marked, such as 8 and 13 or 12 and 17.	"I can compare numbers by looking at where they sit on the path." Point to 8 and 13. "13 is further along the path than 8. That means 13 is larger than 8." "8 and 13 are not next to each other. There is distance between them."	Display 12 and 17. Ask: "Which number is larger? How do you know? Are the numbers close together or far apart?" Correction: If students choose the smaller number, point to both numbers: "Which number is further along the path? If it is further along, is it larger or smaller?"	Students compare pairs using a number path or number line, such as 6 and 9, 14 and 18, or 25 and 52. Students explain: "___ is larger than ___ because it is further along the line." Fade from pointing on a complete path to comparing numerals and using the path only to check.
Locating numbers using benchmarks within 0–10 or 0–20 Use a bounded number line or path with endpoints and a halfway point. Example: place 7 on a 0–10 line.	"I am going to place 7 on this line. First, I look at the start and end points. This line starts at 0 and ends at 10." "I know 5 is halfway between 0 and 10. Seven is greater than 5 and less than 10." "Seven is past halfway and closer to 10, so I will place it here."	Students place 3 on a 0–10 line. Ask: "What are the start and end points? What is halfway? Is 3 before or after halfway?" Correction: If a number is placed on the wrong side of halfway, return to benchmarks: "Is 7 less than or greater than 5? Should it go before or after halfway?"	Students place numbers such as 2, 6, 8, and 9 on a 0–10 line, or numbers within 20 on a 0–20 line. Students explain: "I placed ___ here because it is ___." Fade from marked endpoints and halfway points to partially marked or open lines when students are accurate.
Locating two-digit numbers on a 0–100 number line Year 1 focus. Use a bounded 0–100 number line with endpoints and benchmark points such as 50 and decade numbers. Example: place 46 or 72.	"I am going to place 46 on a 0–100 number line." "This line starts at 0 and ends at 100. I know 50 is halfway." "Forty-six is a little less than 50, so it belongs just before halfway." "I placed 46 just before halfway because it is close to 50 but less than 50."	Students place 72. Ask: "What are the start and end points? What is halfway? Is 72 before or after 50? Which ten is 72 close to?" Correction: If students place 72 before halfway, ask: "Is 72 greater or less than 50? So should it go before or after halfway?"	Students estimate and place numbers such as 28, 64, 81, and 95 on a 0–100 line. Students use 0, 50, 100, and nearby tens to explain: "I placed ___ here because it is after/before ___ and close to ___." Fade from benchmarked lines to less marked bounded number lines.
Estimating a missing number from relative spacing Show a section of a number line between two labelled endpoints, such as 20 and 30, with an unlabelled point near the middle or slightly past halfway.	"This line section starts at 20 and ends at 30." "I know halfway between 20 and 30 is 25." "This point is about halfway, so the number is probably close to 25." Label the point and explain the estimate.	Display a point between 40 and 50, slightly past halfway. Ask: "What are the numbers at each end? What is halfway? Is the point before or after halfway? Is it closer to 40, 45, or 50?" Correction: If the estimate is unreasonable, slow down: "Let's use the interval. What are the endpoints? What is halfway? Should our estimate be less than or greater than halfway?"	Students label marked points on number line sections using endpoints and halfway points. Students explain: "The point is close to ___ because ___." Fade from teacher-marked halfway points to students identifying the halfway point themselves.
Brief review using linear representations Use short daily routines once students have been introduced to the number range and representation. Examples: linear board games, before/after flash, which number is more, visual magnitude match.	"We are going to practise using number order and magnitude." Example: display 4 and 6. "Which number is more? 6 is more than 4 because it comes after 4." Use a number path, ten-frame, or dot card to prove the comparison if needed.	Students respond chorally, on mini-whiteboards, with fingers, or to a partner. Ask: "Which number is more? Which is less? How do you know?" Correction: If many students are inaccurate, slow down and return to the relevant representation before continuing quick review.	Students complete 4–8 quick examples using previously taught number ranges. Use "a little bit often" cumulative review: compare numbers, locate before/after, identify which is further along, and explain relative distance. Use representations to support, prove, or correct rather than as the final goal.