

INSTRUCTIONAL GUIDANCE: MAGNITUDE COMPARISON

Teaching guidance and background

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What it looks like

Identifying which number is more or less

- ▶ “___ is more than ___.”
- ▶ “___ is less than ___.”

Comparing numbers using counting order

- ▶ “___ comes after ___, so ___ is more.”
- ▶ “___ comes before ___, so ___ is less.”

Explaining how we know

- ▶ “I know ___ is more because ___.”
- ▶ “I know ___ is less because ___.”

Beginning teen-number reasoning

- ▶ “___ is 10 and ___ more.”
- ▶ “___ has 1 ten and ___ ones.”
- ▶ “Both numbers have 1 ten, but ___ has more ones, so ___ is more.”

Year 1 extension: Comparing two-digit numbers using tens and ones

- This is an **extension**, not the starting point for Year 1 students.
- ▶ “___ has more tens than ___, so ___ is more.”
- ▶ “Both numbers have ___ tens, but ___ has more ones, so ___ is more.”

Why does it matter?

- Magnitude comparison helps students understand the relative size of numbers.
- For 6–8-year-old children, symbolic number comparison should be the strongest instructional focus.
- Foundation instruction should emphasise comparing numerals within 20 using counting order, number tracks/paths, and quantity representations.
- Year 1 instruction should extend comparison to numbers within 100 using teen-number understanding, tens and ones, hundreds charts, Base-10 materials, and place-value charts.

Goal of instruction

The goal of instruction is to move students from accurately comparing familiar small numbers towards comparing larger numbers within 20, including teen numbers.

For **Foundation**, the core focus should be:

1. comparing numerals and quantities to at least 20,
2. using counting order to explain which number is more or less,
3. using number tracks or number paths to prove comparisons,
4. comparing same, more, and less using clear stem sentences,
5. beginning to notice teen numbers as **10 and some more**, where appropriate.

For **Year 1**, the core focus should extend to:

1. extend comparison to numbers within 100 for this recommendation, while continuing to build broader curriculum expectations for larger number ranges.
2. revisiting teen numbers as **10 and some more** as a bridge into place-value work,
3. comparing two-digit numbers using tens and ones,
4. using number tracks, hundred charts, base-10 materials, and place-value charts to explain comparisons.

Place-value comparison of two-digit numbers, especially using tens and ones to compare numbers such as **54 and 38**, should be treated as a **Year 1 extension from Foundation work**, not as optional enrichment only. It is warranted when students are working with numbers to 100, while recognising that some Year 1 students will still need substantial work with teen numbers and decade structure first.

Teaching Guidance and Background

The phases below are cumulative. Foundation students may work mainly through Phases 1–3 within 20. Year 1 students should revisit those foundations briefly, then extend comparison to numbers within 100 using decade, tens-and-ones, and place-value reasoning.

Phase 1: Compare familiar small numbers

Use numbers within 10.

Examples:

- 4 and 6
- 8 and 5
- 10 and 10

Focus language:

- ▶ ___ is more than ___.
- ▶ ___ is less than ___.
- ▶ ___ and ___ are the same.

Phase 2: Compare teen numbers using counting order and number tracks

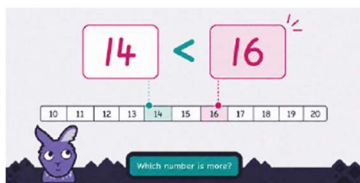
Use numbers within 20.

Examples:

- 12 and 15
- 14 and 16
- 18 and 15
- 19 and 17

Focus language:

- ▶ ___ comes after ___, so ___ is more.
- ▶ ___ comes before ___, so ___ is less.



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This is a **core Foundation routine** and an important review routine for Year 1 students who are not yet secure comparing numbers within 20.

Phase 3: Foundation emerging / Year 1 bridge — compare teen numbers using 10 and some more

Use base-10 blocks, ten-frames, bead strings, or grouped counters to show that teen numbers are made from **10 and some more**.

Examples:

- 14 is 10 and 4 more.
- 16 is 10 and 6 more.
- 18 is 10 and 8 more.

Focus language:

- ▶ ___ is 10 and ___ more.
- ▶ Both numbers have 10. ___ has more extra ones, so ___ is more.

This phase should support emerging teen-number understanding in Foundation and serve as a bridge into Year 1 place-value work. It should not be treated as a full place-value unit in Foundation.

Phase 4: Year 1 extension — compare two-digit numbers using tens and ones

Use this in Year 1 when students are comparing numbers beyond 20 and developing understanding that a two-digit number is made of tens and ones. Students who are not yet secure with teen numbers as 10 and some more may need additional work in Phase 3 before this phase.

Examples:

- 35 and 30
- 46 and 42
- 54 and 38

Focus language:

- ▶ First compare the tens.
- ▶ ___ has more tens than ___, so ___ is more.
- ▶ If the tens are the same, compare the ones.

This is an extension from Foundation comparison work. It is appropriate Year 1 content, but students may need a careful bridge through teen numbers, decade numbers, and base-10 representations before they can compare all two-digit numbers efficiently.



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Vocabulary and Stem Sentences

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Consistent mathematical language helps students compare numbers accurately and explain how they know. Use simple, high-utility language first, such as **more**, **less**, **same**, **before**, and **after**. Introduce more formal language, such as **greater**, **equal**, **tens**, and **ones**, as students are ready. Representations should support students to explain or check a comparison, but the main goal is for students to compare the value of numerals.

Relevant mathematical vocabulary

Vocabulary	Child-friendly definition	Questions and stem sentences
more	A number or amount that is bigger.	"___ is more than ___."
greater	Another way to say more.	"___ is greater than ___."
less	A number or amount that is smaller.	"___ is less than ___."
smaller	Another way to say less.	"___ is smaller than ___."
same	Both numbers or amounts match.	"___ and ___ are the same."
equal	The same amount or value.	"___ is equal to ___."
before	Comes earlier in the counting order.	"___ comes before ___, so ___ is less."
after	Comes later in the counting order.	"___ comes after ___, so ___ is more."
compare	Decide which number is more, less, or the same.	"I compared ___ and ___. ___ is more."
numeral	A written number symbol.	"This numeral is ___."
ten	One group of ten.	"___ is 10 and ___ more."
ones	Single units.	"___ has ___ ones."
tens	Groups of ten. Use mainly for Year 1 extension work.	"___ has more tens than ___."

Representations and stem sentences

Representation	When to use	Stem sentences
 Hundreds chart / Place-value chart	Use in Year 1 to compare numbers within 100 and notice decade patterns. Use as a Year 1 extension for two-digit comparisons within 100.	"___ is further along the hundreds chart, so ___ is more." "___ comes before ___, so ___ is less." "First compare the tens." "___ has more tens than ___, so ___ is more." "The tens are the same, so compare the ones."
Number track or number path	Core representation for Foundation comparisons within 20 and Year 1 review within 20. Useful when students are using counting order to decide which number is more or less.	"___ comes after ___, so ___ is more." "___ comes before ___, so ___ is less."
Counters or blocks	Use when students need to build and compare visible quantities. Useful for early comparisons and for checking understanding.	"I made ___ and ___." "___ has more." "___ has less."
One-to-one matching	Use when students are unsure which collection has more. Matching objects one-to-one helps students see whether one set has extras left over.	"I matched them." "___ has some left over, so ___ is more."
Fingers	Use for small numbers only, especially when students need a quick concrete support.	"I showed ___ fingers." "___ is more because I need more fingers to show it."



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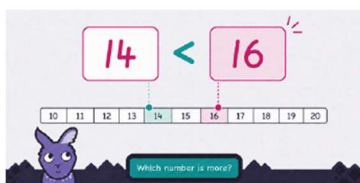
Ten-frame	Use for numbers within 10 and for early teen-number structure. Useful when students are beginning to see 10 and some more.	"___ fills a ten-frame and has ___ more." "___ is 10 and ___ more."
Base-10 materials	Use to show teen numbers as 10 and some more, then extend in Year 1 to two-digit numbers within 100.	"___ is 10 and ___ more." "___ has ___ tens and ___ ones."
Hundreds chart	Use in Year 1 to compare numbers within 100 and notice decade patterns.	"___ is further along the hundreds chart, so ___ is more." "___ comes before ___, so ___ is less."

Using stem sentences

Stem sentences should be used throughout instruction. They help all students participate, rehearse mathematical language, and explain their thinking. Use them during teacher modelling, choral response, partner rehearsal, mini-whiteboard practice, and independent explanation.

Useful comparison stems include:

- ▶ "___ is more than ___."
- ▶ "___ is less than ___."
- ▶ "___ and ___ are the same."
- ▶ "___ comes after ___, so ___ is more."
- ▶ "___ comes before ___, so ___ is less."
- ▶ "I know ___ is more because ___."
- ▶ "I know ___ is less because ___."
- ▶ "___ is 10 and ___ more."
- ▶ "Both numbers have 10, but ___ has more ones, so ___ is more."
- ▶ "___ has more tens than ___, so ___ is more."
- ▶ "The tens are the same, so I compare the ones."



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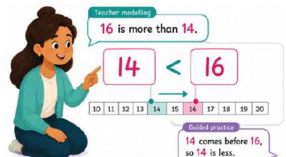
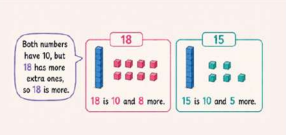
Learning intention

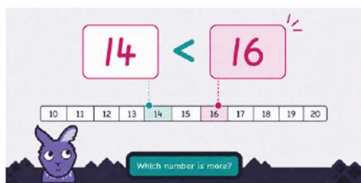
We are learning to compare numbers and explain which number is more, less, or the same.

Success criteria

- I can read and compare two numerals.
- I can identify which number is more, less, or the same.
- I can use counting order, number tracks, number paths, ten-frames, Base-10 materials, or other representations to prove or explain my thinking.
- I can explain my comparison using a sentence stem.

Explicit Instruction Guidance

Context and Presentation	Teacher Modelling	Guided Practice / Correction Routine	Supported Independent Practice
Comparing familiar numbers within 10 Display two numerals, such as 4 and 6 , with a number track, number path, fingers, counters, or ten-frame available to prove the comparison if needed.	“The numbers are 4 and 6. I am comparing them to decide which number is more.” Point to both numbers on the number track. “6 comes after 4, so 6 is more. 4 comes before 6, so 4 is less.” “Say it with me: 6 is more than 4. 4 is less than 6.”	Display 7 and 5 . Ask: “Which number is more? How do you know?” Students respond chorally, on mini-whiteboards, or to a partner: “7 is more than 5.” Correction: If students choose incorrectly, point to both numbers on the number track. “Which number comes after? Numbers that come after are more.”	Students compare pairs within 10, such as 3 and 8, 6 and 6, 9 and 2 . Students circle or write the number that is more, then say or write the comparison sentence: “___ is more than ___.” “___ is less than ___.” “___ and ___ are the same.”
Comparing teen numbers using a number track or number path Display two teen numerals, such as 14 and 16 , with a number track or number path to 20. 	“The numbers are 14 and 16. I will use the number track to compare them.” Point to 14, then 16. “16 comes after 14. Numbers that come after are more. So, 16 is more than 14.” “14 comes before 16. Numbers that come before are less. So, 14 is less than 16.”	Display 18 and 15 . Ask: “Which number is more?” Students respond: “18.” Prompt: “Use the stem sentence.” Students: “18 comes after 15, so 18 is more.” Correction: If students say 15 is more, point to both numbers on the number track and restate: “15 comes before 18, so 15 is less. 18 comes after 15, so 18 is more.”	Students compare teen-number pairs using a number track or number path, such as 12 and 17, 19 and 16, 11 and 11, 13 and 15, 20 and 18 . For each pair, students read both numerals, identify which is more or less, and explain using: “___ comes after ___, so ___ is more.”
Comparing teen numbers as 10 and some more Display two teen numerals, such as 14 and 16 , with Base-10 materials, ten-frames, bead strings, or grouped counters. 	“The numbers are 14 and 16. I will build each number as 10 and some more.” Build 14 as 10 and 4 more. Build 16 as 10 and 6 more. “Both numbers have 10. Now I compare the extra ones. 16 has 6 extra ones and 14 has 4 extra ones. Six extra ones is more than 4 extra ones, so 16 is more than 14.”	Display 18 and 15 . Students build both numbers as 10 and some more. Ask: “Do both numbers have 10? Which has more extra ones?” Students: “18 has more extra ones, so 18 is more.” Correction: If students compare only the last digit or count inaccurately, rebuild both numbers carefully: “First make 10. Now add the extra ones. Both numbers have 10, so we compare the extra ones.”	Students compare teen-number pairs using Base-10 or structured materials, such as 13 and 17, 12 and 19, 16 and 16, 15 and 11 . Students build each number, compare the extra ones, and say: “Both numbers have 10, but ___ has more extra ones, so ___ is more.”
Comparing two-digit numbers using tens and ones — Year 1 extension.	“The numbers are 35 and 30. When we compare two-digit numbers, we compare the tens first.” Build or place each number on a place-value chart. “35 has 3 tens and 5 ones. 30	Display 46 and 42 . Ask: “What do we compare first?” Students: “Tens.” Ask: “Are the tens the same? What do we compare next?” Students: “The ones.”	Students compare two-digit pairs using Base-10 materials and a place-value chart, such as 35 and 30, 46 and 42, 54 and 38, 67 and 72, 81 and 81, 40 and 46 . Students build or



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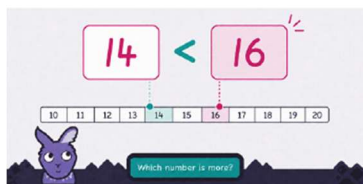
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Display two numerals, such as 35 and 30, with Base-10 materials and a place-value chart. $35 > 30$<table><tr><th>Tens</th><th>Ones</th></tr><tr><td>3</td><td>5</td></tr><tr><td>3</td><td>0</td></tr></table> Both numbers have 3 tens, but 35 has more ones, so 35 is more. $46 > 42$<table><tr><th>Tens</th><th>Ones</th></tr><tr><td>4</td><td>6</td></tr><tr><td>4</td><td>2</td></tr></table> Both numbers have 4 tens, but 46 has more ones, so 46 is more. $54 > 38$<table><tr><th>Tens</th><th>Ones</th></tr><tr><td>5</td><td>4</td></tr><tr><td>3</td><td>8</td></tr></table> 54 has more tens than 38, so 54 is more. 10 (one ten) 1 (one) Compare tens first. If tens are the same, compare ones.	Tens	Ones	3	5	3	0	Tens	Ones	4	6	4	2	Tens	Ones	5	4	3	8	has 3 tens and 0 ones. The tens are the same, so I compare the ones. 5 ones is more than 0 ones, so 35 is more than 30.”	Correction: If students say 38 is more than 54 because 8 is more than 4, respond: “You compared the ones before the tens. In two-digit numbers, we compare tens first. 54 has 5 tens. 38 has 3 tens. Five tens is more than 3 tens, so 54 is more.”	write each number, compare tens first, compare ones only if needed, and say or write the comparison sentence.
Tens	Ones																				
3	5																				
3	0																				
Tens	Ones																				
4	6																				
4	2																				
Tens	Ones																				
5	4																				
3	8																				

Once students can accurately compare numbers within the taught range, move those comparisons into brief daily review. Review should use numerals first, with number tracks, number paths, ten-frames, counters, Base-10 materials, hundreds charts, or place-value charts used to support, check, or explain when students are unsure or inaccurate.

If many students are inaccurate during review, pause the review routine and return to explicit modelling with the relevant representation before continuing.



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Review and Practice

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Daily review should be brief: about 5–10 minutes. Use numerals first, with representations used to support, check, or explain when students are unsure or inaccurate.

Use high rates of active participation so all students respond. Students can respond chorally, on mini-whiteboards, with response cards, or through brief partner rehearsal.

Check the Magnitude Comparison: Resources for a slide bank that can be used to support these review and practice routines.

Core review routine: Which number is more?

Use this routine for quick daily review once students have been explicitly taught how to compare numbers within the relevant range.

Step	Teacher action	Student response
1. Show two numerals	Display two numerals, such as 7 and 9.	"The numbers are 7 and 9."
2. Ask which number is more	"Which number is more?"	"9 is more than 7."
3. Ask which number is less	"Which number is less?"	"7 is less than 9."
4. Ask students to explain	"How do you know?"	"9 comes after 7, so 9 is more."
5. Check with a representation if needed	Use a number track, number path, ten-frame, counters, hundred chart, or Base-10 materials to check or explain.	"I can see/check that ___ is more than ___."
6. Repeat with quick examples	Use 4–8 examples, mixing more, less, and same-number pairs, such as 4 and 6, 8 and 5, 10 and 10, 12 and 15.	"___ is more than ___." "___ is less than ___." "___ and ___ are the same."

Review variations

Once students know the routine, vary the response mode to maintain engagement and increase opportunities to respond.

- **Choral response:** Students say the full comparison sentence together.
- **Mini-whiteboards:** Students write the number that is more or less, then say the sentence.
- **Partner rehearsal:** Students tell a partner which number is more or less and how they know.
- **Same-number examples:** Include pairs such as **8 and 8** so students practise identifying when numbers are the same.
- **Mixed review:** Include a small mix of current and previously taught number ranges.

Correction routine

If many students are inaccurate, pause the review routine and return to explicit modelling. For example:

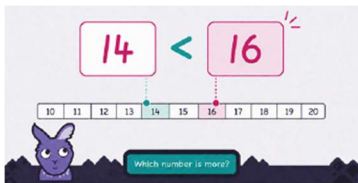
- "Let's point to both numbers on the number track."
- "Which number comes after?"
- "Numbers that come after are more."
- "Now say the comparison sentence with me."

If Year 1 students are comparing two-digit numbers inaccurately, return to Base-10 materials, a hundreds chart, or a place-value chart and model comparing tens first.

Links to related review routines

- Some related routines appear in other recommendation areas because they serve a different primary purpose.
- In **Number Sequence**, routines such as **Before and After Flash**, **Number Order Build**, and **Cover and Reveal on a Number Path** support students who need more practice with before, after, and number order.
- In **Magnitude Estimation**, routines using linear board games, movement along number tracks, number paths, and number lines support students to connect number order with position, distance, and relative magnitude.

Teachers may draw on those routines when students need additional work with number order or linear magnitude, but the main goal in Magnitude Comparison is for students to compare numerals and explain which number is more, less, or the same.



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Implementation Summary

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- Magnitude comparison means deciding which number is more, less, or the same.
- The main goal is for students to compare **numerals**, using representations to prove or explain their thinking.
- For Foundation, number tracks or number paths are the strongest core representation for comparison within 20.
- For Year 1, instruction should extend to comparing numbers within 100.
- Teen numbers as **10 and some more** can begin in Foundation as emerging understanding and should be revisited in Year 1 as a bridge into two-digit place value.
- For Year 1, base-10 blocks should be used to connect teen numbers to broader two-digit numbers as tens and ones.
- Place-value charts and two-digit comparison should be clearly labelled as a **Year 1 extension from Foundation work**, not as the starting point for students still insecure within 20.
- Stem sentences should be used consistently to support participation, reasoning, and precise mathematical language.
- Instruction should include explicit modelling, guided practice, independent practice, brief daily review, and cumulative review.