

Place value problem-solving and review

CURRICULUM ALIGNMENT

NUM.PVT.4

investigate how decimals and percentages (and fractions) can be compared, ordered and expressed in related terms.

ALG.PRR.4a

identify, explain and apply generalisations, including properties of operations, mathematical models and patterns.

INTERACTIVES Place Value Chart (Sliding Digits) · display, explore

WHAT THIS LESSON TEACHES

Use clues about digits in the tenths, hundredths and thousandths places to narrow down a mystery decimal number in games and play.

→ 'I have three tenths and no hundredths' pins two columns but leaves the thousandths free.

→ 'I am bigger than 0.3 but smaller than 0.31' crosses off everything that is 0.31 or more.

MODEL THIS ON THE BOARD

CRACKING THE MYSTERY DECIMAL CLUE BY CLUE

- 1 Read clue 1: a decimal with two places and tenths digit 4 so list 0.40 to 0.49 on the mat.
- 2 Apply clue 2 to cross off numbers that do not match the new rule.
- 3 Continue with each clue until only one number remains.

DISCUSSION STARTER

REFLECT Which is trickier to compare — large whole numbers or decimals? Why?

ANSWER KEY

Scaffold: visual check on the page

Q1: 0.30x (e.g. 0.300–0.309)

Q2: 0.60–0.69

Q3: 0.301–0.309

Q4: 0.425

a) Always — The tenths place is fixed so all others are eliminated.

b) Sometimes — Three clues can narrow to several candidates until a fourth clue is added.

c) Always — Each clue targets its own column without changing the others.

d) Never — Two clues often leave a range of numbers that fit.