

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 : That place is fixed, so other tenths digits cannot fit.

b) Sometimes : True if clues are broad; false if they pin one number.

c) Never : It only fixes the thousandths place; the tenths digit needs its own clue.

d) Sometimes : True with tight clues; false when many numbers still fit.