

Lesson 35 **NUMBER****Percentages as fractions and decimals**

CURRICULUM ALIGNMENT

NUM.FRC.4a

explore (model, compare and convert) the relationships between fractions, decimals and percentages.

NUM.PVT.4

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

INTERACTIVES Phone Battery · challenge, display, explore

WHAT THIS LESSON TEACHES

Percent means out of one hundred, so any percentage is that many hundredths. We write it as a fraction over 100, simplify, and as a decimal by dividing by 100.

→ 35% means 35 out of 100, written as $35/100$.

→ $80\% = 80/100 = 4/5$ (dividing top and bottom by 20).

→ $5\% = 5$ divided by $100 = 0.05$.

MODEL THIS ON THE BOARD

CHANGE 35% TO FRACTION AND DECIMAL

- 1 Write 35% as 35 out of 100, so the fraction is $35/100$.
- 2 Divide top and bottom by 5 to simplify: $7/20$.
- 3 Divide 35 by 100 to get the decimal: 0.35.

ANSWER KEY

Scaffold: visual check on the page**Q1:** $20/100 = 1/5 = 0.2$ **Q2:** $50/100 = 1/2 = 0.5$ **Q3:** $40/100 = 2/5 = 0.4$ **a)** Always : By definition percent means out of 100.**b)** Always : 25 divided by 100 is 0.25.**c)** Sometimes : True for $40\% = 2/5$; false for $37\% = 37/100$, which will not simplify.**d)** Never : 75% and $3/4$ are the same amount.

EXTENSION SHEET · STRETCH ANSWERS

S1: 97 squares (97% of $100 = 97$)**S2:** 17 squares (17% of $100 = 17$)**S3:** 18 squares (18% of $100 = 18$)**S4:** 18 squares (18% of $100 = 18$)**S5:** 88 squares (88% of $100 = 88$)