# Negative numbers

## National Curriculum attainment target

• Interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero

## Lesson objectives

- Count backwards through zero with negative numbers
- Interpret negative numbers in context

#### Prerequisites for learning

Pupils need to:

- understand the number system
- count backwards from any two-digit number

## Vocabulary

negative number, negative, positive

## Success criteria

Pupils can:

- continue counting beyond zero
- use the pattern of positive numbers to count in negative numbers
- use number facts to work out differences between temperatures



**Collins** Connect

Year 5, Unit 5, Week 1

# Getting Started

- Choose an activity from Number Number and place value.
- Choose a game or activity from Fluency in Number Facts: Y5/Y6 Number and place value.

## Teach

#### Resources

mini whiteboard, pen and eraser (per child)



- Ask: What is a negative number?
- Listen to children's ideas. Establish that when numbers get to zero they just carry on. Any number less than zero is called a negative number.



• Say: Take turns to say alternate numbers and count back from 0 to -20.





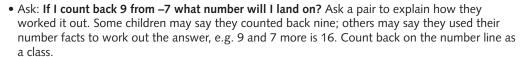
- Write –34 on the board. Say: Every time I clap my hands, count back from –34 in your heads. When I fold my arms I am finished. Clap in a rhythmic way at an appropriate speed for your class. Fold your arms after about eight claps.
- Ask several children what number they have in their head before saying the correct number. Repeat from different starting numbers.



• Ask: What are the similarities between positive and negative numbers? Establish that the numbers follow the same pattern as positive numbers, although the values work in the opposite way.



• Display: Slide 1.





- Ask: If I count back 13 from -16 what number will I land on? Ask some children for their answer and then jump back on the number line as a class.
- Repeat with other numbers. Expect children to use their understanding of number to work out the answers mentally.



- Display: The Thermometer tool.
- Set the temperature to 8 °C. Say: One place where negative numbers are used is in measuring temperatures. Temperatures are measured in degrees Celsius.
- Say: When the weather gets colder the temperature goes down and can go into negative numbers when it is very cold.



- Say: Watch what is happening to the temperature now and tell me how much it has changed by. Make the thermometer go down to -6 °C.
- Ask some pairs to share their ideas. Establish that the temperature got colder and went down 14 degrees Celsius.
- Repeat for other changes in temperature.
- Say: Write a positive and a negative temperature on your board.



- Say: Swap boards with your partner and work out the difference between their two temperatures.
- Ask pairs to swap back and check their partner's answer.
- Repeat several times.

# Individualised Learning

Refer to Activity 3 from the Learning activities on page 217.

Pupil Book 5B: - Page 8: Negative numbers

**Progress Guide 5:** – Extension, Year 5, Unit 5, Week 1, Lesson 3:

Race to zero

Resources: 0–9 dice (per pair); counter

(per child)

# Plenary

#### Resources

large 0-9 dice (per class)

- Divide the class into two teams. Write Team A and Team B on the board and zero underneath each team name.
- Team A rolls the dice. Tell everyone in Team A to subtract the number from their current score in their heads.
- Ask three or four members of the team for their answer. Then write the new score on the board for each team.
- Repeat until one team scores –50. They are the winners.



## Homework Guide 5

Year 5, Unit 5, Week 1, Lesson 3: Negative counting

# Overcoming Barriers

• Children may find negative numbers challenging as it is an abstract concept. Give them plenty of counting opportunities supported by a number line so they have a visual image.