Addition and subtraction facts – patterns

National Curriculum attainment targets

• Read, write and interpret mathematical statements involving addition (+), subtraction (−) and equals (=) signs

• Represent and use number bonds and related subtraction facts within 20

Lesson objectives

• Represent and use addition and subtraction facts within 20

• Recognise patterns of similar calculations

• Realise the effect of adding and subtracting zero

Previous related lessons

Unit 1, Week 2, Lessons 1–4; Unit 2, Week 1, Lessons 1–4; Unit 2, Week 2, Lessons 1–4; Unit 4, Week 1, Lessons 1–4; Unit 5, Week 2, Lessons 1–4; Unit 7, Week 1, Lessons 1–4; Unit 7, Week 2, Lessons 1, 2 and 3

Prerequisites for learning

Pupils need to:

• recall addition and subtraction facts within ten

• show an improving recall of addition and subtraction facts within 15

• understand the concept of zero (0)

**Vocabulary**

zero, one, two, three … fifteen, how many?, count, count on,

add, plus, total, equals, makes, count back, subtract, minus,

take away, difference, leaves

Future related lessons

Unit 9, Week 2, Lesson 4; Unit 11, Week 1, Lessons 1, 2 and 3;

Unit 11, Week 2, Lessons 1, 3 and 4

Success criteria

Pupils can:

• recognise patterns of similar calculations

• begin to apply this knowledge to solving addition and subtraction problems

• show that they understand that adding or subtracting zero does not change the original number



Getting Started

• Choose an activity from Number – Addition and subtraction.

• Choose a game or activity from *Fluency in Number Facts: Y1/Y2* – Addition and subtraction.

**Year 1, Unit 7, Week 2**

Teach

**Resources**

sheet of paper and marker pen (per pair)

• Write four incomplete addition and subtraction calculations involving zero on the board:
7 + 0 = □ 6 − 0 = □ 0 + 10 = □ 12 – 0 = □■

• Discuss each calculation with children. Agree and display the answer for each one.

• Say: **When you add or subtract zero the number does not change.**

• Display: the Tree icon showing two trees with 10 apples on one tree and 0 on the other.

• Say: **I am going to add these two sets. Can you tell me the number sentence?**

• Write on the board: 10 + 0 = 10. Read the number sentence with children.

• Click to move one apple from the left-hand tree onto the right-hand tree (so that there are nine apples on one tree and one on the other).

• Say: **I am going to add these two sets. Can you tell me the number sentence?**

• Write on the board: 9 + 1 = 10 below the previous addition number sentence. Read the new number sentence with children.

• Continue in this way, clicking to move the apples from the left-hand to the right-hand tree one at a time and writing the corresponding number sentences, one below the other, to make addition facts for ten up to 3 + 7 = 10:
10 + 0 = 10 9 + 1 = 10 8 + 2 = 10 … 4 + 6 = 10 3 + 7 = 10

• Draw children’s attention to the column of addition number facts for ten.

• Ask: **What do you notice about these numbers? Can you see a pattern?**

• Discuss children’s suggestions and ideas, encouraging them to identify the pattern.



• Say: **With your partner, see if you can find the last three number sentences in this pattern of addition facts for ten.** Share children’s findings.

• Add the last three addition facts, in order, to the displayed list:
2 + 8 = 10 1 + 9 = 10 0 + 10 = 10.

• Display: the Tree tool showing one tree with ten apples on it. Write on the board: 10 − 0 = 10.
Read the number sentence with the children.

• Next, click to remove one apple from the tree and write 10 − 1 = 9 below the previous subtraction number sentence. Read the new number sentence with children.

• Replace the apple so that there are ten apples on the tree again.

• Say: **Here are ten apples. Two apples fall off** (click twice to remove two apples). **Can you tell me the number sentence?**

• Write 10 − 2 = 8 below the previous subtraction number sentence. Read the new number sentence with children.

Alter the range of numbers used,

as appropriate. For example, if children are confident and accurate with addition and subtraction within 15, gradually extend the range to addition and subtraction within 20.

• Continue in this way, clicking to remove one more apple from the ten on the tree each time to make subtraction facts for ten up to 10 − 7 = 3:
10 – 0 = 10 10 – 1 = 9 10 – 2 = 8 … 10 – 7 = 3

• Draw children’s attention to the column of subtraction number facts for 10.

• Say: **What do you notice about these numbers? Can you see a pattern?**

• Discuss children’s suggestions and ideas, encouraging them to identify the pattern.

• Ask: **With your partner, see if you can find the last three number sentences in this pattern of subtraction facts for ten.** Share children’s findings.

• Add the last three subtraction facts, in order, to the displayed list:
10 – 8 = 2 10 – 9 = 1 10 – 10 = 0.

Individualised Learning

 **Pupil Book 1B** – Page 33: Pirate treasure patterns

 **Progress Guide 1** – Extension, Year 1, Unit 7, Week 2, Lesson 4:
 Flag facts

Refer to Activity 4 from the Learning
activities on page 293.

Plenary

• Discuss the effect of adding or subtracting zero.

• Encourage children to suggest that adding or subtracting zero to or from a number does not change the number.

• Display: the Tree tool showing two trees, with nine apples on the left-hand tree and three apples on the right-hand tree. Ask: **How could we write this as an addition calculation?**

• Take suggestions. Write on the board: 9 + 3 = □. Ask children to find the answer.

• Write 12, to complete the calculation (9 + 3 = 12).

• Say: **Nine add three equals 12. Can you suggest a subtraction fact that uses nine, three and 12?** (12 − 3 = 9 or 12 − 9 = 3)

**Homework Guide 1**

Year 1, Unit 7, Week 2, Lesson 4: Fact finder

• Repeat for further addition or subtraction facts within 15, asking children to suggest a related fact each time.