WORKSHEET 1: Part–Part–Whole Basics

A. Complete the Part–Part–Whole Diagrams

Fill in ALL missing numbers.

1.

Whole: 18

Parts: _____ and _____

2.

Whole: 25

Parts: 17 and _____

3.

Whole: 40

Parts: _____ and 9

B. Build All 4 Number Facts for Each Partition

Write 2 addition facts and 2 subtraction facts.

Parts: 12 and 8 Whole: 20

_____ + _____ = _____

_____ + _____ = _____

_____ − _____ = _____

_____ − _____ = _____

C. Create Your Own PPW Diagram

Choose a number between 20 and 50, then complete the tasks below.

Whole: _____

Parts: _____ and _____

Draw the PPW diagram:

Write all four number facts:

_____ + _____ = _____

_____ + _____ = _____

_____ − _____ = _____

_____ − _____ = _____

D. Explain Your Thinking

In one or two sentences, explain:

Why does partitioning help us understand addition and subtraction?

WORKSHEET 2: Partitioning With Materials

A. Show the Number Using Dots (Draw Counters)

Draw dots/counters to show TWO different partitions of each number.

14

Partition 1: ____ + ____

Partition 2: ____ + ____

(Draw dots below)

20

Partition 1: ____ + ____

Partition 2: ____ + ____

(Draw dots below)

B. True or False? Explain

Write T / F and give a short explanation.

1. **14 can only be partitioned in one way.**
   T / F
   Explain: _____

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2. **If 8 + 12 = 20, then 20 − 8 = 12.**
   T / F
   Explain: _____

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3. **Partitioning always makes subtraction easier.**
   T / F
   Explain: _____

C. Missing Part Problems

Whole 32, Part 24 → Missing part: _____

Whole 48, Part _____ = remainder 19

_____ + 17 = 39

52 = 24 + _____

D. Draw Your Own Model

Draw both a part–part–whole diagram and a bar model for the number:

26, with parts 14 and 12

Part–Part–Whole Diagram:

Bar Model:

WORKSHEET 3: Bar Models

A. Complete the Bar Models

Find each missing part.

1.

Whole: 27

Parts: _____ + _____

2.

Whole: 46

Parts: 28 + _____

B. Write All 4 Number Facts

Whole: 33 Parts: 21 and 12

_____ + _____ = _____

_____ + _____ = _____

_____ − _____ = _____

_____ − _____ = _____

Whole: 54 Parts: 30 and 24

_____ + _____ = _____

_____ + _____ = _____

_____ − _____ = _____

_____ − _____ = _____

C. Draw & Label a Bar Model

Choose a whole between 50 and 100. Split it into two parts and draw:

- A bar showing the whole
- Partition lines
- Numbers labelled clearly

Whole: _____

Parts: _____ and _____

Bar model drawing:

Matching 4 number facts:

_____ + _____ = _____

_____ + _____ = _____

_____ − _____ = _____

_____ − _____ = _____

D. Reasoning Challenge

Ali says:

"If I know one part and the whole, I can always find the missing part." **Is Ali correct?**

Explain your answer.

WORKSHEET 4: Unknown Values

A. Solve the Missing Number

1. **_____ + 18 = 29**
2. **45 – _____ = 17**
3. **63 = _____ + 27**
4. **52 – 24 = _____**
5. **_____ + 16 = 34**
6. **90 – _____ = 48**

B. Connect Using Inverse Operations

Whole: 58

Part: 36

1. **Find the missing part: _____**
2. **Write 1 addition fact**
3. **Write 1 subtraction fact**
4. **Explain how the two facts connect**

C. Number Sentence Detective

Circle the correct equation for each scenario:

1. **"A bag has 38 marbles. 12 are red. How many are blue?"**
   - **a) 12 + 38 = □**
   - **b) □ + 12 = 38**
   - **c) 38 – □ = 12**
   - **d) 38 = □ + 26**
2. **"I had some money. I spent $25. Now I have $14 left."**
   - **a) □ – 25 = 14**
   - **b) 25 + □ = 14**
   - **c) 14 + 25 = □**

Explain why the correct one works.

D. Word Problem

Create a missing-part story about the number 70.

WORKSHEET 5: Multiple Partitions

A. Partition the Number 30 (Three Ways)

1. ____ + ____ = 30
2. ____ + ____ = 30
3. ____ + ____ = 30

Now circle the pair you think is easiest for mental maths.

B. Build 4 Facts for the Pair: 22 and 8

Addition:

1.
2.

Subtraction:

1. _____
2. _____

C. Partition These Numbers in 2 Ways Each

1. 18 →
   - ____ + ____
   - ____ + ____
2. 44 →
   - ____ + ____
   - ____ + ____
3. 59 →
   - ____ + ____
   - ____ + ____

D. Explain

Why do addition and subtraction “undo” each other?

Write your explanation in 2–3 sentences.

WORKSHEET 6: Word Problems & Reasoning

A. Use Bar Models to Solve

1. Mia has 27 stickers. She gives 9 away.
   How many are left?
   Show a bar model + answer: _____
2. A class has 45 pencils.
   17 are red, the rest are blue.
   How many are blue? _____
   Show a PPW diagram.
3. A number is split into 25 and 14.
   What is the whole? _____
4. A number sentence is:
   □ – 32 = 18
   Find the missing number: _____
   Explain how you solved it using inverse operations.

B. Create a Challenge Problem

Write your own multi-step partitioning problem.

Include:

- A whole
- 2 parts
- A question
- Space for a diagram

C. Justify Your Thinking

Explain why bar models help show the relationship between parts and the whole.
