Start here: four sessions, one reusable kit

This kit turns a table, pencils and a few counters into four small learning sessions. The activities cover equal groups, a fictional community garden, a club budget and reading evidence. Each session has a printable learner sheet followed by answers and facilitation notes. Pick one session or run the sequence over four meetings. There is no requirement to finish every question in one sitting.

Allow about 30 minutes as a planning estimate: five minutes to introduce and model, fifteen minutes to explore, five minutes to compare explanations and five minutes to check and choose a next step. Adjust this to the group. A learner who needs more time should keep access to the materials and explanation; speed is not the learning goal.

These are original practice activities created by WorksheetWise. The places, observations, budgets and historical text are fictional teaching examples. They are not research findings or an official curriculum assessment. An adult should select appropriate tasks and review responses. A correct answer on one occasion is useful feedback, not proof of lasting mastery.

Before printing: choose a session and read its answer page. Print learner pages separately from answer pages.

Materials: pencils, scrap paper and large counters or drawn dots. An adult can prepare any cut-out materials. Avoid small loose pieces where they are unsuitable.

For a mixed group: offer the same problem with different ways to respond—drawing, speaking, writing or handling counters.

Set up an inclusive learning table

Invite learners to work alone, with a partner or with an adult. Explain that they can pause, ask for a question to be read aloud or use a drawing. Keep the first task visible and give one instruction at a time. Readiness matters more than a grade label: briefly demonstrate one example before choosing the support or extension task.

Print in black and white at actual size or use the printer’s fit option after checking a sample. The A4 and US Letter editions have the same content. For larger text, use the webpage version or enlarge a learner sheet. Read diagrams and tables aloud when needed. Do not use colour alone to distinguish an answer from a correction.

For a library drop-in, repeat the short introduction as families arrive and let participants leave with an unfinished sheet. For a homeschool group, choose a shared discussion time after independent work. At home, use the first two questions as a short session. These settings need different pacing even when they use the same printable.

Opening words: ‘We are trying a way to solve this. You may draw, explain or write. We will check together.’

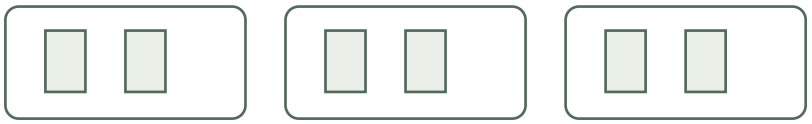
Preparation check: can each participant see the example, reach the materials and hear or read the directions?

Closing question: ‘What helped you understand this, and what would you like to try next?’

Learner worksheet

Session 1: books, tables and equal groups

A fictional reading club arranges books on tables. An equal group has the same number of items as every other group. You can use counters or draw small rectangles for books. For the worked example, three tables with two books each contain 2 + 2 + 2 = 6 books. We can write this as 3 × 2 = 6. Tell your partner what each number represents.



3 × 2 = 6

1. Draw four tables with three books on each. Write the repeated addition, the multiplication and the total number of books.

2. Rearrange the same twelve books into three equal groups. How many are in each group? Explain what changed and what stayed the same.

3. Five tables each need four pencils. How many pencils are needed? Show one way to check.

4. Share eighteen bookmarks equally between three tables. How many does each table receive? Write a multiplication that checks your answer.

5. A learner says four groups of six make ten because 4 + 6 = 10. Explain the difference between adding two numbers and counting equal groups.

Extension: find every possible whole-number group size for twelve books when none are left over. Explain how you know the list is complete.

Answer key

Session 1: answers and next steps

1. Four groups of three give 3 + 3 + 3 + 3 = 12 and 4 × 3 = 12. Accept a clearly labelled array or another accurate representation. 2. Three groups contain four books each. The total stays twelve; the number of groups and the number in each group change. Learners may notice the connection between 4 × 3 and 3 × 4.

3. Five groups of four need twenty pencils. Check using 4 + 4 + 4 + 4 + 4, an array, or 20 ÷ 5 = 4. 4. Each table receives six bookmarks; 3 × 6 = 18 checks the sharing. 5. Four groups of six total twenty-four. The expression 4 + 6 joins quantities of four and six; it does not represent four groups each containing six.

For the extension, possible group sizes are 1, 2, 3, 4, 6 and 12. Pair each size with its number of groups: 12, 6, 4, 3, 2 and 1. Testing sizes from one to twelve and rejecting those with remainders is one valid completeness argument.

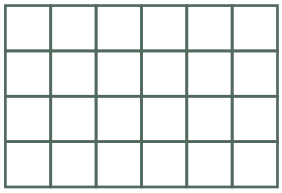
Support: use two groups of three before returning to four groups. Ask the learner to point to one group as they explain.

If a learner counts correctly but cannot write an equation, connect each spoken quantity to its symbol. Do not assume the counting itself is wrong.

Next session check: use three groups of five with a new context. Ask for both an answer and a representation before increasing the numbers.

Session 2: plan a community garden

A fictional group designs a rectangular garden 6 metres long and 4 metres wide. Fencing goes around the outside; plants cover the inside. Each square metre needs two seedlings. Seedlings cost 3 money units each. There are no paths inside the rectangle in this simplified model. Draw a sketch and label the sides before calculating.



Each square represents 1 m²

1. Find the garden’s area in square metres. Explain why you multiply the length by the width.

2. Find the perimeter in metres. Explain why your answer has a different unit from area.

3. How many seedlings are needed? What is their total cost? Show each step.

4. A 120-unit budget must cover seedlings and 12 units for labels. Can the group afford the plan? State any shortfall.

5. Compare a second garden that is 8 metres long and 3 metres wide. Does it need the same number of seedlings? Does it need the same length of fence?

Extension: the group chooses the original garden but leaves a 2 by 2 metre corner unplanted. How many seedlings are now needed, and do seedlings plus labels fit the budget?

Answer key

Session 2: answers and next steps

1. Area = 6 × 4 = 24 square metres. A grid shows four rows of six unit squares. 2. Perimeter = 6 + 4 + 6 + 4 = 20 metres. Area measures a surface; perimeter measures the length of its boundary. If a learner writes 24 metres, ask what one unit represents rather than simply correcting the label.

3. The garden needs 24 × 2 = 48 seedlings. Their cost is 48 × 3 = 144 units. 4. Adding labels gives 144 + 12 = 156 units. The shortfall is 156 − 120 = 36 units. A clear conclusion should refer to the whole proposed cost, not only seedlings.

5. The second garden has area 8 × 3 = 24 square metres and perimeter 8 + 3 + 8 + 3 = 22 metres. It needs the same seedlings but two more metres of fence. Equal area does not imply equal perimeter. Extension: the unplanted corner has area four square metres, leaving twenty for plants. Forty seedlings cost 120 units; labels bring the total to 132, still twelve over budget.

Support: count grid squares and trace the boundary with a finger. Keep the two measurements visible side by side.

Discussion: this simplified budget excludes tools, water, soil and fencing. Name those assumptions before treating it as a real project plan.

Next step: let learners choose a smaller planted area and check its cost. Several answers may satisfy the budget; require a clear calculation and explanation.

Session 3: a club budget that balances

A fictional club has 120 money units. It plans to spend 42 on materials, 30 on transport and 18 on refreshments. It wants to keep at least 20 as a reserve. A reserve is money not yet committed to the planned purchases. All figures are invented for arithmetic practice; tax and other costs are outside this model.

1. Calculate the planned spending and the balance left. Does the plan meet the reserve goal?

2. Transport increases to 45. Find the new total and balance. How much must spending fall to leave a reserve of 20?

3. The club reduces refreshments to 10 and keeps the revised transport cost. Find the balance. Does this revised plan work?

4. Another group starts with 100 and spends 35, 28 and 12. Which group has more left: this group or the revised club? By how much?

5. Write one question the club should ask before cutting a cost. Explain why choosing priorities requires more than arithmetic.

Extension: materials are sold in packs costing 7 each. If the club buys one fewer pack than the original plan, keeps transport at 45 and refreshments at 18, what balance remains?

Answer key

Session 3: answers and next steps

1. Spending is 42 + 30 + 18 = 90; the balance is 120 − 90 = 30. It exceeds the reserve goal by ten. 2. Revised spending is 42 + 45 + 18 = 105, leaving fifteen. Spending must fall by at least five to leave twenty. Watch for answers that reduce spending by twenty; that confuses the target reserve with the amount of change needed.

3. With refreshments at ten, spending is 42 + 45 + 10 = 97 and the balance is twenty-three. It meets the goal with three to spare. 4. The other group spends seventy-five and has twenty-five left, two more than the revised club. Compare remaining balances rather than starting amounts.

5. Suitable questions include whether everyone can still participate, whether commitments have already been made and which materials are essential. Accept reasoned alternatives. Extension: the original materials cost buys six packs. Five packs cost thirty-five. Total spending becomes 35 + 45 + 18 = 98, leaving twenty-two.

Support: draw a starting-money box, three spending boxes and a remaining-money box. Use a calculator if arithmetic fluency prevents discussion of the budget structure.

Ask learners to estimate before calculating. A balance greater than the starting money needs an explanation, such as new income, which this model does not include.

Transfer: change only one cost and predict whether the balance will rise or fall. Then calculate. This checks the relationship between spending and balance.

Session 4: what does the evidence show?

These fictional measurements were taken at noon on one day: Park 22°C, Station 25°C, Market 27°C. An invented diary says, ‘The market felt unbearable today; it is always the hottest place in town.’ The diary and the table are teaching examples, not authentic historical sources. Read each carefully and distinguish what is observed from what is claimed.

1. Which measured location was warmest? Calculate the range between the highest and lowest values.

2. Calculate the mean temperature across the three measurements. Give the result to one decimal place.

3. Does one day’s table establish that the market is always hottest? Explain the limit of the evidence.

4. What can the diary tell us about its writer? Which words describe a feeling rather than a measured temperature?

5. Plan a fairer comparison. Name two details you would keep consistent and one way you would gather more evidence.

Extension: add a second day with Park 26°C, Station 24°C and Market 25°C. Is the diary’s ‘always’ claim consistent with these invented observations? Explain using both days.

Session 4: answers and next steps

1. The market is warmest in the first table. Range = 27 − 22 = 5°C. 2. The sum is seventy-four; dividing by three gives approximately 24.7°C. The mean is a summary of these three measurements, not a temperature measured at every location.

3. No. The table supports a comparison at the measured time on that day. It does not describe every day, every time or every place in the town. 4. ‘Felt unbearable’ records the writer’s subjective experience. The diary can be evidence of that reported experience without proving the temperature claim. A source can be useful even when it cannot answer every question.

5. Possible controls include measurement time, thermometer type, height and shade conditions. Repeat observations on several days and report the method. Explain that consistent measurement conditions help comparisons but do not remove every possible source of uncertainty. Extension: on the second day the park is warmest at 26°C. That observation contradicts the claim that the market is always hottest within this invented example.

Support: separate two headings, ‘the data show’ and ‘we do not know yet’. Sort spoken statements into them.

Extend: ask what changes if one thermometer was in direct sun. Avoid presenting the comparison as a controlled experiment unless its method warrants that description.

Transfer: discuss a statement from a real class source, accurately identified and attributed, using the same evidence-versus-claim distinction.

Reusable session planner and reflection

Use this page before and after a session. Write one observable aim, such as ‘represent three equal groups with counters and an equation’. A broad aim such as ‘be better at maths’ does not tell you what to notice today. Plan a small check that matches the aim, then choose support if the check reveals a gap.

After the session, record a task-level observation rather than a label about the learner. ‘Counted each group accurately but added the two factors’ tells you more than ‘weak at multiplication’. A useful next step might be linking a drawing to repeated addition before returning to multiplication notation. Keep records proportionate to your setting and follow your organisation’s procedures.

Session and skill focus: _____

Materials and learner pages to print: _____

My first worked example: _____

Support option and extension option: _____

What will participants explain or show? _____

What did we notice, and what will we revisit? _____

Printing, sharing and adapting the kit

WorksheetWise grants permission to print, copy and share this kit for classroom, library, tutoring and home-learning use, including free public sessions. You may adapt tasks to your learners and translate your own working copies. Keep the WorksheetWise attribution and identify any changes you make so recipients can distinguish your version from the original. You do not need to provide a backlink to use the resource.

You may distribute the unchanged PDF free of charge in a library resource collection or a school learning platform. Please do not sell the PDF itself or imply an endorsement from WorksheetWise. The kit is available without registration or purchase. WorksheetWise separately offers optional paid products; access to this download does not require them.

For an online recommendation, the resource page gives readers the current A4 and Letter editions, previews and the full text. A direct PDF link is also welcome. Suggested description: ‘Four free printable learning sessions from WorksheetWise, covering equal groups, a garden plan, budgeting and interpreting evidence, with answers and facilitation notes.’ Describe what the resource contains rather than promising educational results.

To make another activity, use the matching-game generator with your own vocabulary or equivalent values. Check the pairs before printing and choose a number appropriate to your group. Families who need a wider collection can explore the worksheet library and compare the current subscription options. The free kit remains usable on its own.

Resource page: https://www.worksheetwise.org/resources/library-activity-kit

More free tools: https://www.worksheetwise.org/generators

Created by WorksheetWise · English edition · September 2026