

Continuous provision: Composition of numbers to 8

Maths area

Turn the maths area into a 'Spotty Bugs and Ten Frames' station where children build every way to make 8 using ladybird-style bugs and part-whole mats, so composition of numbers to 8 comes up naturally as they play with the resources rather than through an adult-led task.

Resources

- Large felt or card ladybirds, each with 8 blank spots and a set of 8 loose black spot counters to place on them
- Wooden ten frames and double-sided red/yellow counters (enough for 8 per frame)
- Part-whole 'splitting mat' boards showing one whole circle connected to two part circles, sized for small-world use
- Two small pots or egg cups per child, plus a tray of 8 identical small objects (shells, pom-poms, conkers) to split between the pots
- A set of 0 to 8 numeral cards and matching numeral dice (0 to 8)
- Small whiteboards and chunky pens for children who want to jot down the numbers they find
- A washing line and pegs at child height for hanging pairs of numeral cards that make 8

When you join the play

- I wonder how many spots are hiding under your hand if 3 are showing on the ladybird — how could we check?
- You've put 5 counters in one pot. How many will you need in the other pot so we still have 8 altogether?
- Can you find a different way to split the 8 shells between your two pots than the way you did last time?
- If 4 and 4 make 8, what happens if I move one shell from this pot to that pot — what do the numbers become now?
- What would it look like if all 8 went in one pot and none went in the other?
- Can you peg up two numeral cards on the line that make 8 when you put them together?

Look for

- Children filling a ten frame to 8 and naming how many more are needed to reach 8
- Children moving objects between two pots and noticing the total stays at 8 while the parts change
- Children spotting that 2 and 6, or 6 and 2, use the same two amounts in a different order
- Children confidently naming the pair 0 and 8 or 8 and 0 as a way to make 8, including when one part is empty
- Children using fingers, counters or marks on a whiteboard to check a partner's split of 8 is correct

- Children repeating a split they already found and recognising it, rather than only generating new ones
- Children using mathematical language such as 'altogether', 'more', 'the same as' or 'left' during play

Construction

Turn the construction area into a 'Building Site' with a floor ten-frame mat marked out in tape and a brick delivery depot, so that building walls and towers out of 8 bricks naturally leads children to split, compare and rebuild the number 8 in different ways.

Resources

- Wooden or plastic building bricks in two colours (for example red and yellow)
- A large floor ten-frame mat with 8 spaces marked out in tape or chalk
- Small builders' trucks, trays or crates for sorting bricks into two groups
- Number cards or tiles 0 to 8
- Builders' hard hats, tabards and tool belts for role play
- Chunky pens and clipboards for 'site inspectors' to record how towers are built
- An egg box or tray with 8 sections for 'brick deliveries' from the depot
- A toy crane or pulley for lifting and lowering bricks onto the wall

When you join the play

- You've got 8 bricks for your wall - how many are red and how many are yellow?
- Can you build your wall of 8 a different way, with a different number of each colour?
- Your ten frame has 6 bricks in it. How many more deliveries do you need to fill all 8 spaces?
- If 3 bricks fall off your tower of 8, how many are still standing?
- The depot has delivered 0 bricks so far today - how many more do we need to reach 8?
- You've got 7 bricks on your wall. Is that more or less than your friend's tower of 8?

Look for

- Children splitting 8 bricks into two groups by colour without being asked (for example 3 and 5, or 4 and 4)
- Children filling the ten frame and noticing how many more bricks are needed to reach 8
- Children rebuilding a tower of 8 a different way and talking about the two amounts
- Children using the language of 'take away' when bricks are removed from a tower, including noticing when none are left
- Children comparing towers of 6, 7 and 8 and saying which has more or fewer bricks
- Children subitising small groups of bricks on the ten frame rather than counting each one

Small world

A woodland small-world scene with two hollow logs set in a mossy tray, where 8 small-world hedgehogs can be hidden, shared and sorted between the two logs as they go to sleep for the night,

giving children repeated, playful chances to explore every way to make 8 and to practise number bonds to 8.

Resources

- 8 small-world hedgehogs (or 8 matching small woodland creatures such as mice or squirrels)
- 2 hollow logs, bowls or fabric 'burrows' for the hedgehogs to hide in
- A woodland small-world mat with trees, leaves and a mossy base
- A set of leaf-shaped number cards numbered 0 to 8
- A giant ten-frame mat sized for small-world pieces
- Small baskets or leaf 'trays' for carrying hedgehogs between logs
- A simple two-part mat (two circles joined by a line) for laying hedgehogs out as a whole and two parts
- A torch for 'night-time' den play

When you join the play

- How many hedgehogs are curled up in this log, and how many are in the other log?
- You've got 8 hedgehogs altogether tonight - can you find a different way to share them between the two logs?
- What if all 8 hedgehogs slept in one log and none in the other - how many would that log have?
- I can see 3 hedgehogs here - how many more need to go in this log so we have 8 altogether?
- Two hedgehogs have woken up and wandered off to another part of the wood - how many are left asleep now?
- Can you show me that on the ten-frame, so I can see your hedgehogs without counting them one by one?
- You moved a hedgehog from this log to that one - has the total number of hedgehogs changed?

Look for

- Children splitting the 8 hedgehogs between the two logs in different combinations without being told to
- Children checking or recounting to confirm both logs still make 8 altogether
- Children using part-whole language, such as saying '3 and 5 make 8'
- Children representing an empty log as 0 rather than skipping over it
- Children predicting how many are left after some hedgehogs are taken away, before counting to check
- Children placing hedgehogs onto the ten-frame to subitise small amounts rather than counting each one
- Children swapping hedgehogs between logs and noticing the total of 8 stays the same

Outdoors

Turn the mud kitchen corner into an outdoor 'Pinecone Pantry': a chalk ten-frame drawn on the patio slabs sits next to a low builders' tray holding 8 natural loose parts (pinecones, conkers or pebbles) and two small plant pots for sorting them. A nearby 'shaking tree' den (a low tarpaulin or bush) lets

children hide some of the 8 items and reveal how many are left, linking the outdoor space to every way of making 8, ten-frame counting, and take-away.

Resources

- Chalk, for drawing a large 2-row-of-5 ten-frame grid on the patio or playground floor
- 8 natural loose parts per set: pinecones, conkers or smooth pebbles, kept in a wicker basket
- 2 small terracotta plant pots or flowerpots, for splitting the 8 items into two groups
- A low tarpaulin, den sheet or bush ('the shaking tree') for hiding and revealing amounts
- A washing line strung at child height with 8 pegs, for pegging up number cards or loose parts
- Number cards 0 to 8 (laminated, with a hole punched for the washing line), plus a 0 card showing an empty ten-frame
- A small outdoor chalkboard or whiteboard for children to draw their own part-whole 'splits'
- Bug-hotel style trays or logs with hollows, for children to hide amounts within 8 for a friend to find

When you join the play

- You've put some pinecones in each pot — how many are in this one, and how many in that one? How many is that altogether?
- Can you fill the ten-frame on the floor? How many more do you need to make 8?
- If 8 conkers are hiding under the shaking tree and 3 run out, how many do you think are still hiding?
- I can see 0 in one pot and 8 in the other — is that still 8 altogether?
- Can you peg up two numbers on the washing line that make 8 when you put them together?
- What if we take some pebbles away from the ten-frame — how many are left, and how many have gone?
- Can you show me 4 and 4 another way, using the pots and pinecones?
- You said 2 and 6 make 8 — can you check that on the ten-frame?

Look for

- Children splitting the 8 loose parts between the two pots in different ways and comparing their totals
- Children using the chalk ten-frame to see at a glance how many more are needed to make 8
- Children recognising that 0 in a pot still counts as part of the whole of 8 (an empty pot alongside a full one)
- Children predicting how many are hidden under the shaking tree before checking by counting
- Children pegging matching pairs on the washing line (for example 1 and 7, or 5 and 3) and explaining why they make 8
- Children using fingers, loose parts or the ten-frame to work out how many are left after some are taken away
- Children talking about 4 and 4 as two equal groups within 8, linking to doubling
- Children re-sorting the same 8 items into a new pair of groups without being asked, showing they understand there are several ways to make 8

Malleable (playdough)

Set up a 'playdough bakery' in the malleable area where children make pretend buns and press them into an 8-hole bun tray (or two 4-hole trays pushed together to make 8 spaces), sharing the buns between two plates to find all the ways to make 8.

Resources

- Playdough in several colours, enough for each child to make at least 8 small balls
- An 8-hole bun/muffin tray, or two 4-hole trays joined together
- Two small plates or bowls per child, labelled 'Plate A' and 'Plate B', for splitting the 8 buns into two groups
- Rolling pins, small cutters and blunt dough knives
- A laminated ten frame card for pressing playdough balls into, to check how many and how many more are needed to make 8
- Number cards 0 to 8 and blank cards for children to record their own splits
- Small trays or mats to define each child's workspace

When you join the play

- You've made 8 buns for the tray. If 3 go on Plate A, how many are left for Plate B?
- Can you find a different way to share your 8 buns between the two plates?
- I can see 5 and 3 on your plates. Does that make 8 altogether? How do you know?
- What if Plate A has 0 buns? How many would be on Plate B then?
- You've got 6 buns in the ten frame. How many more do you need to make 8?
- Can you make a pattern with your buns, like 4 on each plate? Is that a fair share?

Look for

- Children splitting 8 buns into two groups in more than one way (for example 2 and 6, then 3 and 5)
- Children using the ten frame to check totals and work out how many more are needed to reach 8
- Children recognising that swapping the groups still makes 8 (for example 5 and 3 compared with 3 and 5)
- Children talking about 'none' or 'zero' when one plate is left empty
- Children comparing their split with a friend's and noticing whether the amounts on each plate are equal or not
- Children using number cards to label or record the two parts they have made

Role play shop

Turn the role play area into a 'Fruit and Veg Shop' with a till, baskets and a stock shelf where every item is stocked in a set of 8. Children take on shopkeeper and customer roles, filling orders by splitting 8 items between two baskets, bags or customers, and work out what is left on the shelf after items are sold - meeting composition of 8 and number bonds to 8 through everyday shopping play.

Resources

- A shop counter or table with a till, play coins and notes
- A stock shelf or crate holding exactly 8 of each item (8 play apples, 8 oranges, 8 bread rolls)
- 2 shopping baskets or bags at the till, plus extra baskets for sharing out stock
- Paper bags labelled with numerals 0 to 8 for packing orders
- Order cards showing requests such as '8 tomatoes please'
- An 8-space tray or egg box for displaying and counting stock on the shelf
- A notepad and chunky pencils at the till for mark-making orders and receipts
- Photo item cards and dual-language shop signs for children learning English

When you join the play

- A customer wants 8 apples but our basket is too small - how could we share them between two baskets?
- You've put 3 tomatoes in the bag so far. How many more do we need to make 8?
- If we sell 5 of our 8 buns, how many will be left on the shelf?
- Can you find a different way to put 8 oranges into the two baskets?
- The shelf has 0 lemons left - how many would we need to order to have 8 again?
- I'm a customer and I already have 6 pears in my bag. How many more will make 8?

Look for

- Children splitting a group of 8 items into two baskets in more than one way, for example 2 and 6, then 3 and 5
- Children using the 8-space tray, egg box or their fingers to check how many more are needed to make 8
- Children recalling bonds to 8 quickly during play, for example saying '4 and 4' without counting
- Children acting out selling items and working out what is left of 8 after some are taken away
- Children using zero correctly, for example saying 'there are 0 left, we need 8 more'
- Children noticing that swapping the two baskets still makes 8, for example 2 and 6 being the same as 6 and 2