

Can every counter have a partner? Odd and even

Up to 4 children with 1 adult · 15 minutes

Objective: Children work out whether a group of counters can be split exactly into pairs (even) or always leaves one without a partner (odd), for amounts from 1 to 10.

eyfs.ma.patterns.3 Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.

Resources

- A tub of at least 10 counters per child
- Small mats, each with two circles drawn on it for 'pairing spots'
- Number cards 1 to 10
- Two hoops or two paper plates labelled as 'partner spots' for whole-group demonstration

Key questions

- Does every counter have a partner, or is one left on its own?
- How do you know this number is odd?
- What would happen if we had one more counter?
- Can you show me the counter with no partner?

Vocabulary

odd, even, pair, partner, left over, count

Set-up

Set out the mats and counter tubs at the table. Place the number cards face down in a pile within reach of the group.

What to do

1. Gather the group and say, 'We're going to find out if every counter can have a partner, or if someone gets left on their own.'
2. Turn over a number card, say the number aloud together, and ask a child to count out that many counters into their tub.
3. Model pushing counters into pairs on the mat, one pair at a time, saying 'this one has a partner, this one has a partner' as you go.
4. Ask each child to pair their own counters the same way, moving two at a time into the circles.
5. Once all counters are paired (or one is left over), ask: 'Does every counter have a partner, or is one left on its own?'
6. Introduce the words 'even' (every counter has a partner) and 'odd' (one is left without a partner) for that number.
7. Repeat with a new number card, swapping who turns over the card each round.
8. Finish by lining up the numbers tried so far and asking the group to say 'odd' or 'even' for each one.

Misconceptions

The child pairs the counters correctly but then counts the number of pairs rather than the total number of counters, giving the wrong amount.

Ask the child to point to and count every single counter first, saying each number aloud, then make the pairs afterwards so the two counts stay separate.

With an odd number, such as 7, the child ignores the leftover counter and says there are 6 altogether.

Praise the pairing, then ask the child to point to every counter including the one on its own, and count all of them again so the total matches 7.

The child assumes a number is odd or even just by how it looks or sounds (for example, thinking 10 must be odd because it has two digits), without checking by pairing.

Ask the child to physically pair the counters for that number and count the pairs aloud, so the check comes from the counters, not a guess.

Adapting

- **Support:** Work with amounts up to 5 only, and sit alongside the child to move the first pair together before they try independently, using real partner objects like two shoes to anchor the word 'partner'.
- **Challenge:** Show the number card and ask the child to predict 'odd' or 'even' before touching the counters, then check by pairing; compare two numbers and explain which one has a counter left over.
- **SEND and EAL:** Pair up real objects first (gloves, shoes, socks) and say 'partner' while pointing, before moving to counters; use picture/word cards showing 'odd' and 'even' alongside gesture (two fists knocking together for a pair, one fist alone for 'left over').

Look for

- Child pairs counters independently without being told how
- Child points to the leftover counter and names it as 'left on its own' or similar
- Child predicts odd or even before pairing and checks their prediction
- Child uses one-to-one correspondence accurately when counting the total

Picture cards for this session



Doubles: the same again

Up to 4 children with one adult · 15 to 20 minutes

Objective: Children make doubles of 1, 2, 3, 4 and 5 using real objects, matching their own doubles to the ladybird spot patterns and saying double facts in their own words.

Resources: [eyfs.ma.patterns.3](#) Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.

Resources

- A set of five ladybird picture cards: double 1 (1 spot each side, 2 altogether), double 2 (2 spots each side, 4 altogether), double 3 (3 spots each side, 6 altogether), double 4 (4 spots each side, 8 altogether), double 5 (5 spots each side, 10 altogether)
- A large laminated ladybird body outline split down the middle into two sides (a 'ladybird mat')
- A tub of small black counters or buttons to use as spots
- Two small plates or leaf shapes to show 'one side' and 'the same again'
- Numerical cards 1 to 5

Set-up

Place the ladybird mat on the table with a plate on each side of the middle line. Put the counters in a tub within easy reach. Lay the five ladybird picture cards face down in a pile nearby.

What to do

- Gather the children and show the ladybird mat. Say, 'This ladybird needs spots, the same number on each side.'
- Turn over the top picture card and show it, saying, 'This ladybird has made a double. Let's look at one side.'
- Ask a child to count the spots on one side of the card out loud, then place that many counters on the left plate of the mat.
- Say, 'Now we need the same again on the other side,' and ask a child to copy the same number of counters onto the right plate.
- Push the two plates together onto the ladybird's back and count all the counters together to find the total.
- Say the double fact together as a sentence, for example, 'Double 2 is 4.'
- Turn over the next card and repeat, inviting a different child to count and build each side.
- Once all five cards have been used, mix them up and let children choose a card to build independently, checking their own double before saying the fact aloud.

Misconceptions

A child adds a different, random amount to the second side instead of matching the first side exactly.

Cover one side and ask, 'How many spots are hiding? So how many do we need on this side to match?' Encourage the child to count out the first side again before placing the second side.

A child thinks 'double' always means the number 2, so every ladybird gets exactly 2 spots on each side.

Point to the starting group of counters and ask, 'How many do we have here?' Then say, 'Double means the same amount again, so if we start with 3, we need 3 more, not 2.'

A child counts the spots on one side twice instead of counting both sides together for the total.

Physically slide the two plates together and ask the child to touch and count every counter once, moving each one as they count it.

Adapting

- Support:** Focus on double 1 and double 2 only, using the child's own fingers (one hand, then the other hand) alongside the counters so the 'same again' idea is felt as well as seen.
- Challenge:** Before building a side, ask the child to predict the total out loud, then build it to check. Ask them to find a double fact that matches a ladybird they can see elsewhere in the room, book or display.
- SEND and EAL:** Pair every number word with the matching numeral card and a finger count. Use the same short sentence each time, 'Double 2 is 4,' and model it slowly before asking the child to repeat it alongside the actions.

Look for

- Children placing matching amounts on each side without needing to recount the first side
- Children using the words 'double' or 'the same again' unprompted
- Children self-correcting when the two sides do not match
- Children beginning to predict the total rather than counting every counter from 1

Picture cards for this session



Sharing fairly between two

Up to 4 children with one adult · 15 to 20 minutes

Objective: Children will share a group of real objects fairly between two plates, noticing when both plates match exactly and when one object is left over.

| **eyfs.ma.patterns.3** Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.

Resources

- A bowl of real-life counters to share, such as conkers, shells or buttons
- Two plates (or two hoops) to share the counters onto
- Two small-world figures, such as two teddies, for the counters to be shared between
- A tray or mat to work on

Set-up

Place two plates side by side on a tray or mat, with a small-world figure next to each plate. Put the bowl of counters between the two plates. Sit the group around the tray at a table or on the carpet, with the adult facing the children.

Key questions

- How can we check if the sharing is fair?
- What could we do to make it fair if one plate has more than the other?
- What do you notice when you look at the two plates?
- Do you think there will be any left over? How do you know?
- What could we do with the counter that is left over?
- Which numbers shared out fairly with nothing left over?

Vocabulary

share, fair, equal, each, same, left over, odd, even, pair

What to do

1. Show the children the two plates and the two teddies. Say, 'These two teddies want to share these counters fairly. Fair means everyone gets the same amount.'
2. Count out 4 counters into the bowl together, saying each number aloud.
3. Share the counters one at a time onto each plate, saying 'one for this teddy, one for this teddy' as you go, inviting a child to help you.
4. Ask the children to count how many are on each plate and check they match. Say, '4 shared fairly between 2 plates is 2 each.'
5. Repeat the sharing with 6 counters, then 8, then 10, letting a different child lead each time and checking both plates match.
6. Introduce 5 counters and share them one at a time as before. When one counter is left in the bowl with no plate to go to, stop and ask the children what to do.
7. Explain that 5 shared between 2 is 2 each, with 1 left over, and place the leftover counter clearly between the plates, not on either one.
8. Repeat with 7 counters, then 9 counters, inviting children to predict before sharing whether they think there will be one left over.
9. Finish by lining up the leftover counters from the 5, 7 and 9 shares and asking the children what they notice about these numbers compared with 4, 6, 8 and 10.

Misconceptions

A child places counters unevenly onto the two plates but says it is fair because both plates have 'some' counters on them.

Ask the child to count each plate aloud and compare the two totals. Model moving a counter across so both plates match before agreeing that it is fair.

When sharing an odd number, a child tries to break the leftover counter in half, or hides it, so the plates still look the same.

Reassure the child that some numbers do have one left over. Show that the leftover counter sits whole in the middle, not hidden or broken, saying 'there is 1 left over' together.

A child looks at a pile of counters and guesses whether it will share fairly, without actually sharing them out.

Encourage the child to share the counters one at a time onto the two plates to check, rather than guessing from looking at the pile.

After sharing, a child counts both plates together as one total and calls that the 'fair share', instead of comparing the two plates to each other.

Point to each plate in turn and ask 'how many on this plate?' and 'how many on this plate?' before asking whether the two amounts match.

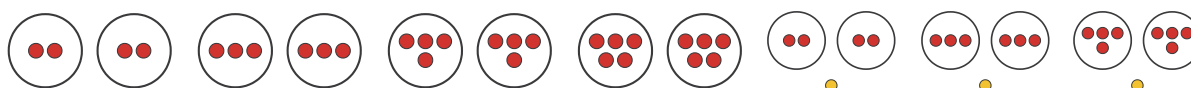
Adapting

- **Support:** Start with 4 counters and physically hand each counter to the child, saying 'one for you, one for teddy' to establish the one-to-one sharing action before moving on to 6, 8 and 10.
- **Challenge:** Ask children to predict, before sharing, whether a number will share out exactly or leave one over, and to explain how they worked it out without sharing the counters first.
- **SEND and EAL:** Use the same short repeated phrase each time, such as 'one, one... left over', alongside pointing and placing gestures. Pair the child with a confident talk partner and use real objects rather than pictures so the meaning is clear.

Look for

- Shares counters one at a time using one-to-one correspondence
- Checks both plates by counting and comparing the totals
- Identifies and names a leftover counter when one is present
- Begins to use words such as fair, odd, even or left over
- Notices a pattern between numbers that share out exactly and those that leave one over

Picture cards for this session



Spotting odd and even numbers to 10

4 to 6 children · 15 to 20 minutes

Objective: Children pair up counters to decide whether numbers to 10 are odd or even, checking that every counter has a partner or that one is left over.

eyfs.ma.patterns.3 Explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.

Resources

- A pot of identical counters for each child (at least 10 each) – conkers, buttons or cubes work well
- A pairing mat for each child – two hoops or two chalk circles side by side
- Picture cards 1 to 8 showing counters paired up for 3, 4, 7, 8, 5, 10, 9 and 6

Set-up

Set out a pot of counters and a pairing mat (two hoops side by side) for each child at the table or on the carpet. Keep picture cards 1 to 8 face down in a pile nearby, ready to turn over one at a time.

Key questions

- How do you know if every counter has found a partner?
- What do you notice about the counter that is left on its own?
- Can you guess if this number will be odd or even before we pair it? How could we check?
- What is the same and what is different about pairing 4 counters and pairing 7 counters?
- Is there a number between 0 and 10 that you think will definitely be even? How do you know?

Vocabulary

odd, even, pair, partner, left over, share, group, counter

What to do

- Gather the group and say, 'We're going to find out which numbers share into pairs with nobody left out, and which numbers always have one left on its own.'
- Give each child 3 counters. Say, 'Put your counters into pairs on your mat – one in this hoop, one in that hoop, keep going until they're all paired up.' Watch them pair the counters.
- Turn over picture card 1 (3 counters in pairs, one left without a partner) and say, 'Look, this matches what you made – one counter has no partner. We call 3 an odd number.'
- Ask each child to add 1 more counter to make 4, and pair them again. Turn over picture card 2 (4 counters in pairs, every counter has a partner) and say, 'This time every counter has a partner, nobody is left out. We call 4 an even number.'
- Add counters to make 7, pair them, then turn over picture card 3 (7 counters in pairs, one left without a partner) and say, 'One is left on its own again – 7 is odd.'
- Add counters to make 8, pair them, then turn over picture card 4 (8 counters in pairs, every counter has a partner) and say, 'Every counter has a partner – 8 is even.'
- Add counters to make 5, pair them, then turn over picture card 5 (5 counters in pairs, one left without a partner) and say, 'One is left over – 5 is odd.'
- Add counters to make 10, pair them, then turn over picture card 6 (10 counters in pairs, every counter has a partner) and say, 'Every single counter has found a partner – 10 is even.'
- Add counters to make 9, pair them, then turn over picture card 7 (9 counters in pairs, one left without a partner) and say, 'One is left over – 9 is odd.'
- Take away counters to make 6, pair them, then turn over picture card 8 (6 counters in pairs, every counter has a partner) and say, 'Every counter has a partner – 6 is even.'
- Finish by asking each child to choose their own amount of counters up to 10, predict whether it will be odd or even, then pair them up to check.

Misconceptions

A child thinks a number is even simply because it is a bigger number, without pairing to check.

Remind them to always pair the counters to find out, and show that some bigger numbers, like 7 and 9, still have one left over.

A child pairs the counters with gaps between pairs, so it looks like more than one is left over.

Model pushing each pair close together, then count together how many single counters are left at the end.

A child thinks the leftover counter should be hidden or taken away because it does not fit anywhere.

Keep the leftover counter in view and say it is still part of the group, it just has not got a partner – that is what makes the number odd.

A child confuses the word 'odd' with its everyday meaning of strange, and looks puzzled when asked if a number is odd.

Pair the word 'odd' with the action and the phrase 'one left over' every time, so the meaning is tied to what they can see and do, not just the word.

Adapting

- Support:** Start with just 3 and 4 counters, use larger easy-to-grasp objects, and place an adult's hand over the child's hand to help push counters into pairs.
- Challenge:** Ask children to predict odd or even before pairing and explain how they know, or to find a different way of arranging the same number of counters that still shows the same result.
- SEND and EAL:** Pair the words 'odd' and 'even' with a consistent gesture (thumbs touching for even, one thumb alone for odd), use real objects rather than relying on spoken explanation, and check understanding by asking the child to point to the odd one out.

Look for

- Pairs counters systematically, working along in order rather than randomly
- Predicts odd or even before pairing, then checks by pairing
- Uses the words 'odd', 'even', 'pair' or 'left over' independently
- Notifies and points out the counter without a partner without being prompted

Picture cards for this session

