Two Parts Make Ten

Teacher		**Class**	Year 1
Subject	Maths	**Topic**	Number bonds to 10
Date		**Room**	
Lesson length	60 minutes	**Country**	United Kingdom

Pupils learn bonds to 10 and matching take-aways linked to 20. They split cubes on part-part-whole mats and write the four sentences.

Curriculum links

- represent and use number bonds and related subtraction facts within 20

Learning objectives

- Students will represent bonds to 10 using cubes, drawings and number sentences.
- Students will use bonds to 10 to add and subtract within 20.

Success criteria

- I can show 10 split into two parts and say the bond.
- I can write additions and take-aways that match bonds to 20.

What students already know

Hold up 10 fingers and ask: how many fingers altogether? Fold down 2, ask how many are up and how many are down.

Key words

number bond	two small counts that join to make a total, here ten [2]
part	one small group that joins with another to make the total [2]
whole	the big total made when the two small groups join [3]
take away	finding what is left when some are removed from the total [2]

Materials

- large part-part-whole mats
- cubes or counters
- mini whiteboards and pens
- ten-frames and spare counters
- Slides 1-11
- Worksheet page 1 copies

Before the lesson

- Print large part-part-whole mats, some with 10 already in the whole circle
- Count pots of exactly 10 cubes or counters per pair, plus ten-frames for stretch
- Test Slides 1-11 and Video clip 2 (0:00-5:00) and Video clip 4 (0:00-2:00) with sound
- Print Worksheet page 1 copies and set out whiteboards

Lesson outline

0–5 min **Starter** 5 min · Whole class

To hook pupils and recall that two parts join to make ten.

YOU DO

1. Draw three empty circles joined by lines on the board.
2. Ask: what whole number shall we split into two parts today?
3. Show Slide 1: Number Bonds to 10 [title]: Two parts make ten!
4. Show Slide 2: Think, pair, share [question]: How many fingers altogether? Pupils hold up ten fingers and count.
5. Show Slide 3: Big idea [statement]: Two parts join to make ten.

STUDENTS DO

1. Hold up both hands and count fingers together to ten.
2. Tell a partner what whole number they want to split.
3. Repeat: two parts join to make ten.

Say: Today our whole is ten. We will split ten into two parts. Two parts join to make ten. Your partner will help you check each split.

Ask: How many fingers do we have altogether on two hands? (10, because your two hands have 10 fingers in total [2].) · If our whole is 10, what could the two parts be? (Any pair that joins to ten, for example 4 and 6 [2].)

Check understanding: Hands up show ten fingers on cue; if miscounted, count slowly together 1 to 10 pointing to each finger.

Support: Let pupils press hands flat on the table and count each finger touched. **Stretch:** Ask pupils to whisper a pair they think makes ten, for example 7 and 3.

Use: Slides 1-3

5–15 min **Teaching** 10 min · Whole class

To model a bond to 10 on a part-part-whole mat with matching sentences.

YOU DO

1. Put 10 cubes in the whole circle of a large mat and explain a number bond consists of a minimum of three circles connected by lines, with the whole written in the first circle and its parts written in the adjoining circles [3].
2. Split the 10 cubes into 7 and 3, because the parts when added together will then equal the whole [3].
3. Show Slide 7: Ten fingers [bullets]: We have ten fingers. · Four down, six up. · Four and six is ten. Model fold down 4 fingers and 6 are still up, so 4 and 6 make 10 [2].
4. Show Slide 4: Did you know? [fact]: Swap parts, still ten! · 3 + 7 is same as 7 + 3. Explain it does not matter which order you add numbers together, the total amount is the same [1].

STUDENTS DO

1. Watch the split and say the two parts and the whole together.
2. Show 4 and 6 on fingers and say four and six is ten.
3. Say both orders with the teacher: 7 + 3 = 10, 3 + 7 = 10.

Say: Watch how I split the whole. Ten is the whole. Seven is one part and three is the other part. If I swap the parts, I still make ten.

Worked example: Whole 10 split into 7 and 3: 7 + 3 = 10 and 3 + 7 = 10, because you know that 7 + 3 is a number bond to 10, you also know that 3 + 7 is a number bond to 10 [1]. Then 10 - 3 = 7 and 10 - 7 = 3, so one bond can be used to represent four number sentences [3].

Ask: If the whole is 10 and one part is 7, what is the other part? (3, you need to add 3 more counters to make 10 [1].) · Does 3 + 7 still make 10 if 7 + 3 makes 10? (Yes, order does not matter, the total is the same [1].)

Check understanding: Pupils show bonds on fingers on cue; reteach with ten-frame empty spaces if many show wrong total.

Support: Keep a full ten-frame of 10 as a reference to match against while counting on. **Stretch:** Ask pupils to say the take-away too, for example 10 take away 4 equals 6.

Use: Slides 4, 7

15–25 min **Sing and show** 10 min · Whole class

To practise recalling pairs to 10 together with movement and song.

YOU DO

1. Show Slide 6: Watch the blocks [video]: Watch two parts join · Call out ten.
2. Play Video clip 2 (0:00-5:00) and pause for pupils to call out each ten.
3. Show Slide 8: Sing the bonds [video]: Listen for pairs to ten · Sing and show fingers.
4. Play Video clip 4 (0:00-2:00) and lead finger shows for each pair.

STUDENTS DO

1. Watch, call out ten when the two parts join.
2. Sing and fold fingers to show each pair to ten.
3. Turn to a partner and swap parts to show both orders.

Say: Join in and show each bond on your fingers. Listen for the two parts. Call out ten when the parts join to make ten.

Ask: We heard 8 + 2 = 10, what is the pair with this one? (2 + 8 = 10 [1].) · How can fingers help you find the missing part? (If you know one part, you can find the missing part by counting up to 10 [2].)

Check understanding: Listen for correct call-outs and look for correct finger totals; replay a verse if recall is shaky.

Support: Let pupils keep hands on table and lift folded fingers to check while counting up. **Stretch:** Pupils sing the matching take-away after each bond, for example 10 - 8 = 2.

Use: Slides 6, 8, Video clip 2 (0:00-5:00), Video clip 4 (0:00-2:00)

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25–50 min **Main activity** 25 min · Pairs

To represent bonds to 10 on mats and write matching additions and take-aways.

YOU DO

1. Show Slide 9: Your task [activity]: Take ten cubes. · Split into two parts. · Say bond and take-away. · With your partner, split ten cubes into two parts. · 10 · In pairs.
2. Give each pair a mat, 10 cubes and a whiteboard; model splitting 10 into 4 and 6 and writing four sentences.
3. Send pairs to split, record and re-split with new pairs, using one bond to represent four number sentences [3].
4. Give out Worksheet page 1: Number bonds: Say the missing part that makes the whole for pupils to complete when mats are tidy.

STUDENTS DO

1. Put 10 cubes in the whole, split into two part circles.
2. Say the bond aloud and write the additions and take-aways on whiteboards.
3. Complete Worksheet page 1 by saying the missing part that makes ten.

Say: Take ten cubes for the whole. Split into two parts. Say the bond and the take-away. Write all four sentences with your partner.

Worked example: Whole 10, parts 4 and 6: 4 + 6 = 10, 6 + 4 = 10, 10 - 6 = 4, 10 - 4 = 6. The two parts can swap places and the total stays the same [2].

Ask: You have 3 red cubes, how many blue cubes make 10? (7, start at 3 and count on until you reach 10, so 3 + 7 = 10 [2].) · What four sentences can 8 and 2 make? (8 + 2 = 10, 2 + 8 = 10, 10 - 2 = 8, 10 - 8 = 2.)

Check understanding: Walk round with ten-frame to check totals are 10; ask pairs to read their four sentences before worksheet.

Support: Give pupils only 10 cubes and a mat already marked with 10 in the whole circle, so they only move cubes between the two part circles [3]. **Stretch:** Pupils try the same split with a whole of 20, using two ten-frames to keep the parts organised.

Use: Slide 9, Worksheet page 1

50–60 min **Plenary** 10 min · Whole class

To check bonds to 10 and link them to bonds to 20.

YOU DO

1. Show Slide 10: Bond family [bullets]: 7 + 3 = 10 · 10 - 3 = 7 · 17 + 3 = 20.
2. Model 16 as a group of 10 and 6 more, recall 6 and 4 make a number bond to 10, so you need to add 4 more to 16 to make two complete groups of 10 [1].
3. Model 13 as one ten and three ones, then add 7 more to make 20 [1], because you can use your knowledge of number bonds to 10 to find number bonds to 20 [1].
4. Show Slide 11: True or false? [truefalse]: 4 + 6 = 10 · Four and six join to ten. · 8 + 2 = 10 · Eight needs two for ten. · 5 + 4 = 10 · Five needs five, not four. Vote true or false.

STUDENTS DO

1. Build 16 and 13 on two ten-frames and say what is needed to reach 20.
2. Vote true or false for each bond and correct the false one to 5 + 5 = 10.
3. Say success lines: I can show the split and write the sentences.

Say: We use tens to make twenty. Sixteen is ten and six more. Six needs four to make ten, so sixteen needs four to make twenty. Thirteen needs seven to make twenty.

Worked example: 17 + 3 = 20: 17 is one ten and seven ones, 7 needs 3 to make the next ten, so add 3 to reach two tens [1]. Matching take-away is 20 - 3 = 17.

Ask: What do you add to 16 to make 20? (4, to make two complete groups of 10 [1].) · Is 5 + 4 = 10 true or false? (False, five needs five, not four; 5 + 5 = 10.)

Check understanding: Mini whiteboards up for 4 + 6, 8 + 2 and 5 + 4; reteach swapped-parts pattern if false one is missed.

Support: Keep number bonds to 10 on display to see what to add to the ones to make the next ten [1].
Stretch: Record three linked facts, for example 13 + 7 = 20, 7 + 13 = 20 and 20 - 7 = 13.

Use: Slides 10-11

Common mistakes

Mistake	How to spot it	How to fix it
Thinking 3 + 7 and 7 + 3 give different totals.	Pupil says one is 10 and the other is not.	Swap two colour groups left to right to show it does not matter which order you add numbers together, the total is the same [1].
Counting the whole again instead of the missing part.	For 8 steps climbed, pupil says 8 left instead of 2.	Count up from 8 as 9, 10, which is two steps, so 8 and 2 make 10 [2].

Support

- Use ten-frames, finger lifts and mats marked with 10 to show empty spaces.
- Count on slowly from the known part to 10 to find the missing part.

Stretch

- Write all four sentences for each bond and explain the swap pattern.
- Use bonds to 10 to find what to add to 13, 16 and 17 to make 20.

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For the LSE or teaching assistant

Stay with target pairs during main activity; check 10 cubes are in the whole, prompt counting on, and scribe sentences if needed.

Check for understanding

Question	Answer
4 + ___ = 10	6
10 - 3 = ___	7
17 + ___ = 20	3

Homework

Ask someone at home to split 10 fingers into two parts and write the bond.

Sources

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