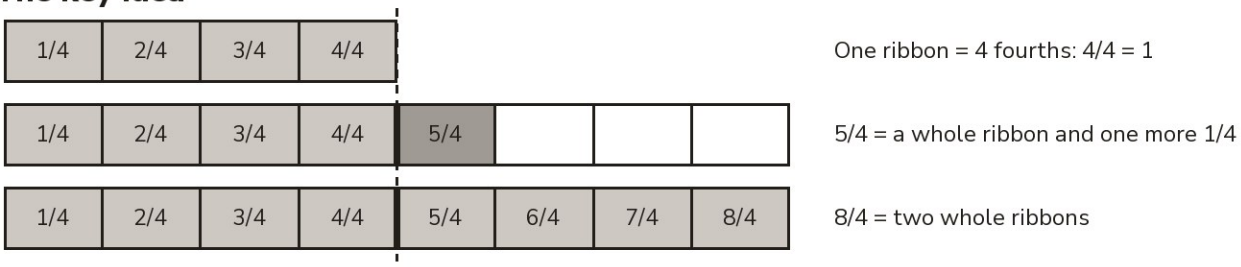
Can a fraction be more than 1? Helping your child count in fourths

Parent page · ages 9–10 · goes with the video "Understand the concept"

A logical idea

Does your child say a fraction is always less than 1? The first fractions we meet (1/2, 1/4, 3/4) are usually parts of a whole, so they're smaller than it. It isn't necessarily carelessness: the idea works for almost all the first examples.

The key idea



We count fourths like objects: 1/4, 2/4, 3/4, 4/4. Four fourths is the whole ribbon: 4/4 = 1. We can keep going: 5/4 is a whole ribbon and one more 1/4. The bottom number tells you the size of the parts; the top number, how many we count.

Always true, and three details

The benchmark is the whole ribbon (4/4 = 1): fewer than 4 fourths is less than 1; 4 fourths is 1; beyond that, it's more (in thirds, the whole ribbon would be 3/3). Details: it isn't "always greater than 1" (3/4 is less than 1); you need the same whole (ribbons of the same length); the parts must be equal.

Questions instead of corrections

- "How could we check?"
- "How many fourths make a whole ribbon?"
- "Is it the same ribbon, with parts the same size?"

Then: "Tell me how you know."

The activities

Page 2: two strips to fold, A and B, and colored pencils. Give your child only page 2: keep this page out of sight while they work. Round-tip scissors to cut out the strips. For the cut-out, a third strip of the same length can help check.

Read after your child has worked it out

- The strips: A whole = 4/4 = 1; 5/4 ends at the first fourth of B; 8/4 = two whole strips.
- Less, exactly, or more than one ribbon: 3/4 less; 6/4 more; 4/4 exactly one ribbon; 2/4 less; 7/4 more.
- 6/4: a whole ribbon (strip A) and 2/4 of strip B.
- Challenge: 5/4, 6/4, and 7/4 (4/4 is exactly one ribbon and 8/4 exactly two, so they don't count).
- Cut-out: 9/4 = two whole ribbons and 1/4 more; you need to take out three ribbons, but you only use one fourth of the third.

A good sign: they count the parts and say where the ribbon ends. If they still say a fraction is smaller than 1, do the strips again with other fractions: it often takes several tries.

A few days later, without warning (cut out)

We need 9/4 of a ribbon for a big garland. How many ribbons do we need to take out? Do we use all of the last one? Explain.



My answer: _____

More Than One Ribbon: counting in fourths



A fraction is always less than 1.

Do you agree with Nora?

1. I predict

We need 5/4 of a ribbon. Is one ribbon enough?

☐ yes ☐ no

Why? _____

2. I fold

1. Cut out strips A and B. They have the same length: each one is a ribbon.
2. Strip A: fold it in half, end to end. Without unfolding, fold it in half again.
3. Unfold, count the parts, trace the folds with a pencil.
4. Do the same with strip B.

3. I count in fourths

1. Place strip B at the end of strip A, edges lined up.
2. Color the parts one by one, counting out loud: one fourth, two fourths, three fourths…
3. Stop at five fourths.

When I colored 4 parts, strip A was: _____

5/4 is _____ whole ribbon and _____ more.

4. I check

Compare with your prediction from step 1.

My prediction:

☐ was right ☐ needs changing

Changed your prediction? Great: you checked it yourself.

5. Less than, exactly, or more than one ribbon?

Predict first, then check with your strips. Circle your answer.

3/4	less than one ribbon	exactly one ribbon	more than one ribbon
6/4	less than one ribbon	exactly one ribbon	more than one ribbon
4/4	less than one ribbon	exactly one ribbon	more than one ribbon
2/4	less than one ribbon	exactly one ribbon	more than one ribbon
7/4	less than one ribbon	exactly one ribbon	more than one ribbon

6. I explain

Why is 5/4 of a ribbon more than one whole ribbon? Explain why to an adult, using your strips.

7. Family challenge

Find all the fractions in fourths that make more than one ribbon, but less than two ribbons. Check with your strips.

My fractions: _____

A

B

Strips A and B: same length. Print at 100%, one-sided.