



3 RIBBONS



3 Ribbons

What's the point of this task?

Using this task, students explore how the number 100 can be decomposed to meet specific conditions. They will realise that since one ribbon is pretty long (at least 60 cm), then the other two cannot be very long. In fact, they will realise that neither of the other two ribbons can be 40 cm. It also allows them to practice addition and subtraction of 1-digit and 2-digit numbers to solve a real problem.

What is nice about the task is that students who need significant addition and subtraction practice can gain that practice by solving the problem using trial and error, whereas students with highly developed reasoning skills can reason about what the lengths can possibly be and how one solution can lead to another.

Questions to facilitate the learning

Other questions that might be asked include:

- Do you think that the shortest ribbon could be 80 cm long? Why or why not?
- Do you think that the longest ribbon could be 50 cm long? Why or why not?
- Could one ribbon be 5 cm long? Why or why not?
- Could one ribbon be twice as long as another?
- What strategy did you use to come up with solutions?
- Once you have a solution, how could you use it to create another one?

Curriculum connections

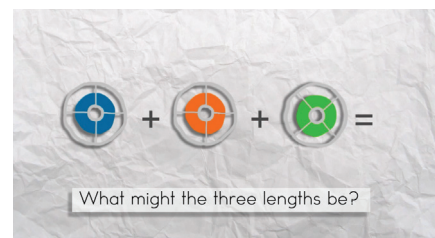
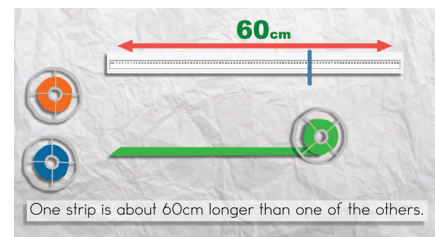
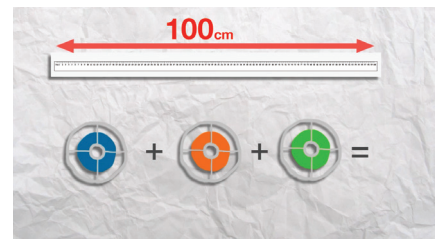
This activity relates to representation of addition and subtraction of 1-digit and 2-digit numbers and decomposition of numbers.

Scaffolding the learning

- Suppose you decided that the shortest ribbon was 10 cm long. What would you do to decide on the other lengths?
- Do you think that you have any choices in deciding on any of the lengths?
- Do you think it is easier choose a length for the shortest ribbon first or the longest one?

Extending the learning

Students might be asked to explore how the ribbons relate multiplicatively. For example, is it possible for one ribbon to be three times as long as another? Four times as long? Five times as long? Ten times as long? [Even though students don't know how to multiply, they can understand that four times as long, for example, means choosing a length, and then adding that amount to itself three more times to get another length.]



About Mathletics:

Mathletics is an online maths resource specifically designed for personalised teaching and learning. Used by thousands of schools across the UK, it is proven to significantly increase levels of student engagement, confidence and motivation and to improve attainment and progress in maths from KS1 to KS4.

For more information on Mathletics visit: www.uk.mathletics.com and [@MathleticsUK](https://twitter.com/MathleticsUK)

About 3P Learning:

3P Learning was established in Australia in 2004 and in the UK in 2006 and has its UK office in Bristol. Its focus is on learner engagement, confidence and motivation and its best known products Mathletics, Spellodrome and Reading Eggs are strong on powerful curriculum-aligned content, 'gaming-style' challenges and rewards. 3P Learning is currently shortlisted for five 2019 Bett awards and its products are used in over 5,000 schools across the UK.

For further information on 3P Learning, please visit: www.3plearning.com

3 Ribbons

The total length of 3 ribbons is 100 cm.

One ribbon is about 60 cm longer than one of the others.

What might the three lengths be?

Name _____