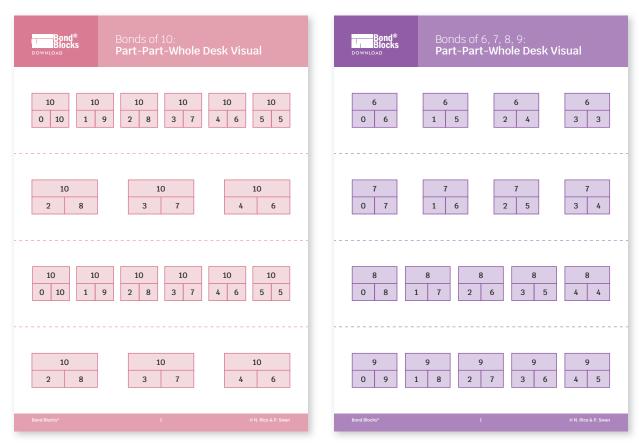


# Using Part-Part-Whole: Desk Visuals

### **Desk Visuals**

Every whole in the Bond Blocks System has a downloadable Desk Visual of the related two-part bonds. These can be used to help develop fluency or as a support for students with working memory difficulties.



The Desk Visuals are ready to be cut out for individual student use.

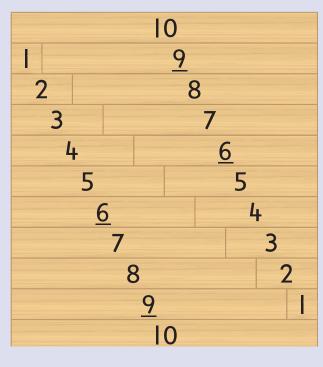
## **Before Using Part-Part-Whole Desk Visuals**

The desk visual is used after the student has completed the Building a Wall activity for a specific whole to identify:

- 1. All of the two-part bonds and
- 2. The two-part bonds using the commutative property of addition.

During the **Building a Wall** activity students use Bond Blocks to construct two-part bonds and then represent them in part-part-whole diagrams. Students **must** engage in this activity prior to being given the visual aid in order to develop of robust understanding of the bonds so as they can apply these understandings to solving addition and subtraction. This is in line with the Concrete-Representational-Abstract approach underpinning the Bond Block system.

#### 1. Building a Wall



#### Two-Part Bonds of Ten

0 and 10

1 and 9

2 and 8

3 and 7

4 and 6

5 and 5

6 and 4

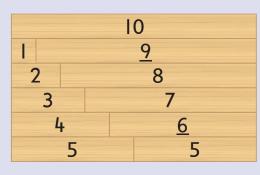
7 and 3

8 and 2

9 and 1

10 and 0

#### 2. Applying the Commutative Property of Addition



"0 and 10 is equal to 10 and 0"

"1 and 9 is equal to 9 and 1"

"2 and 8 is equal to 8 and 2"

"3 and 7 is equal to 7 and 3"

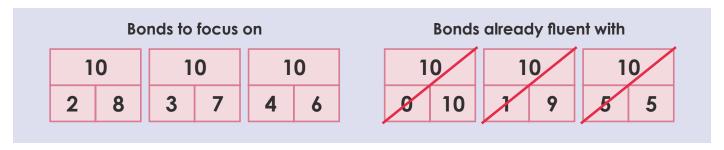
"4 and 6 is equal to 6 and 4"

10	
<u>9</u>	1
8	2
7	3
<u>6</u>	4

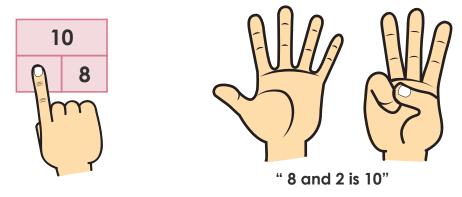
# **Using Desk Visuals to Develop Fluency**

Part-Part-Whole Desk Visuals can be cut into cards and used with students to develop fluency with two-part bonds.

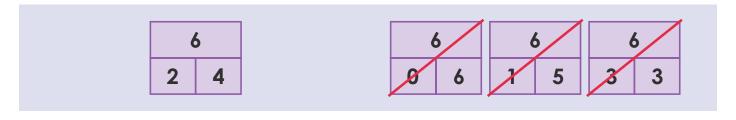
• First, choose a two-part bond visual for ONE specified whole. Cut the strip into single cards. Randomise the order of the cards. Cover different numbers on the cards to test fluency. Discard cards that the student can fluently recall.



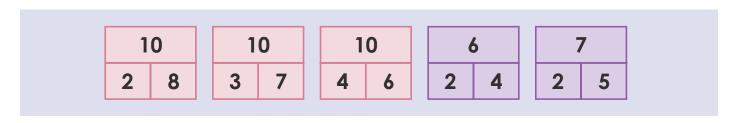
 The remaining cards can be kept and used as memory cards to practise. Cover different numbers to practise and develop fluency. When needed use fingers in a subitised way to support calculating missing numbers.



 Once students are fluent identifying these missing numbers repeat the process for the next whole in the Bond Block sequence.



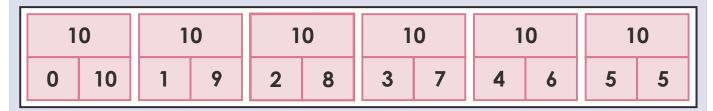
• Students can keep cards of bonds that they find difficult to remember. Students will end up with an individual collection of cards they are focusing on remembering. When students are working on remembering two-part bonds for **multiple** wholes limit the number of memory cards they are focusing on to five.



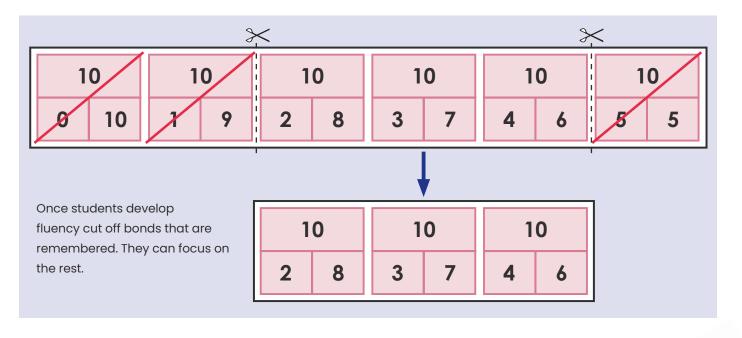
# **Supporting Students with Memory Difficulties**

Students with memory difficulties can be supported by having constant access to relevant number bonds. Part-Part-Whole desk visuals can be used to provide this access. Having constant access to correct number bonds frees up students' working memory to engage in higher order thinking such as applying the bond to calculating strategies and solving problems.

When using desk visuals be sensitive to where they are placed. Students should be involved in this decision.



First use the two-part bond visual, for ONE specified whole, that is in counting order. The bonds are organised in counting order so they can be located easily.



Use a **Look-Cover-Say-Check** approach to develop fluency.



As students develop fluency recalling two-part bonds turn the desk visual face down. Flip Encourage students to verbalise 10 10 10 what they think the bond is before they turn it over to check. 2 8 3 7 4 6