Bond Blocks Support

Bond Blocks Support Book:

Tier One Whole Class Implementation

Bond® Blocks
bondblocks.com

drpaulswan.com.au

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& Dr Paul Swan

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Bond Blocks Support Book - Tier One Whole Class Implementation

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Thank you to Daniel Swan for design.

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Thank you for purchasing Bond Blocks.

We hope they help build

Curiosity,
Connections and
Confidence with maths.

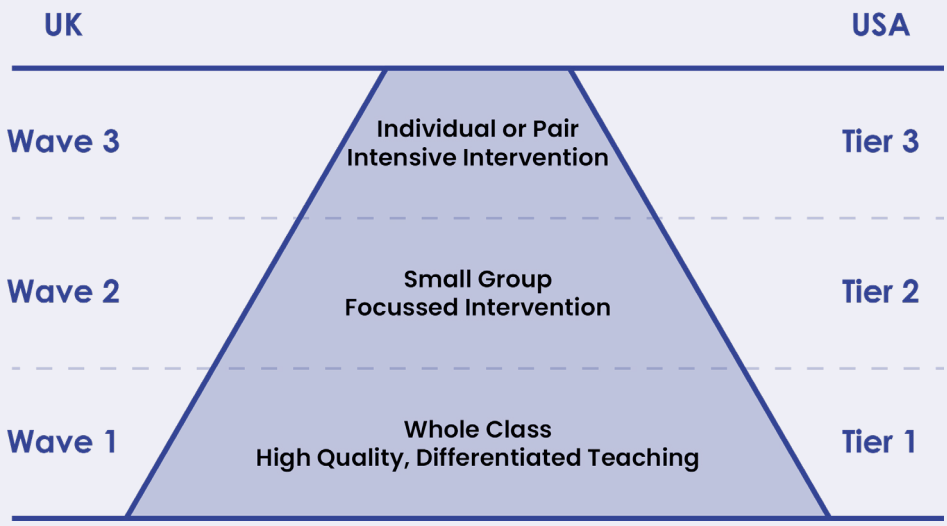
- Narelle and Paul.

Contents

Introduction

Response to Intervention

The Bond Blocks System has been designed to be implemented at a whole school level. Implementation occurs at three different levels in line with a Response To Intervention process of instruction.



Bond Blocks is implemented at three different levels in line with a **Response To Intervention** process of instruction.

Tier One

Firstly, Bond Blocks Core Kit is implemented at a **tier one whole class** level as part of a whole school approach to teaching addition and subtraction, including word problems and related algebraic thinking, in Years 1 to 3.

- Bond Blocks typically **requires three, 8 minute sessions per week** as part of the mental maths and warm up program. There are a small number of Core Lessons that **require three, forty minute sessions** per week.
- For whole class implementation classrooms need one set of wooden Bond Blocks per pair of students.

Tier Two and Three

Secondly, the Bond Blocks Core Kit is implemented at **tier two and three** as an **intervention program** for students in Years 1 to 6 who have specific difficulties with foundational addition and subtraction. For example, students who count to add or subtract.

- Intervention using the Bond Blocks Core Kit requires **four, 10 minute sessions per week.**
- Tier Two Intervention is run in small groups of four or six students.
- Tier Three Intervention is run as an individualised intervention program with either one or two students.
- In an intervention setting students need one set of blocks each to maximise time on task.

Prevention is better than a cure

Using the Bond Blocks system as a whole school approach from years 1 to 3 ensures basic addition and subtraction facts along with word questions are taught in a systematic manner. This will in turn reduce the number of students requiring tier two and tier three intervention.

Tier One Whole Class Implementation

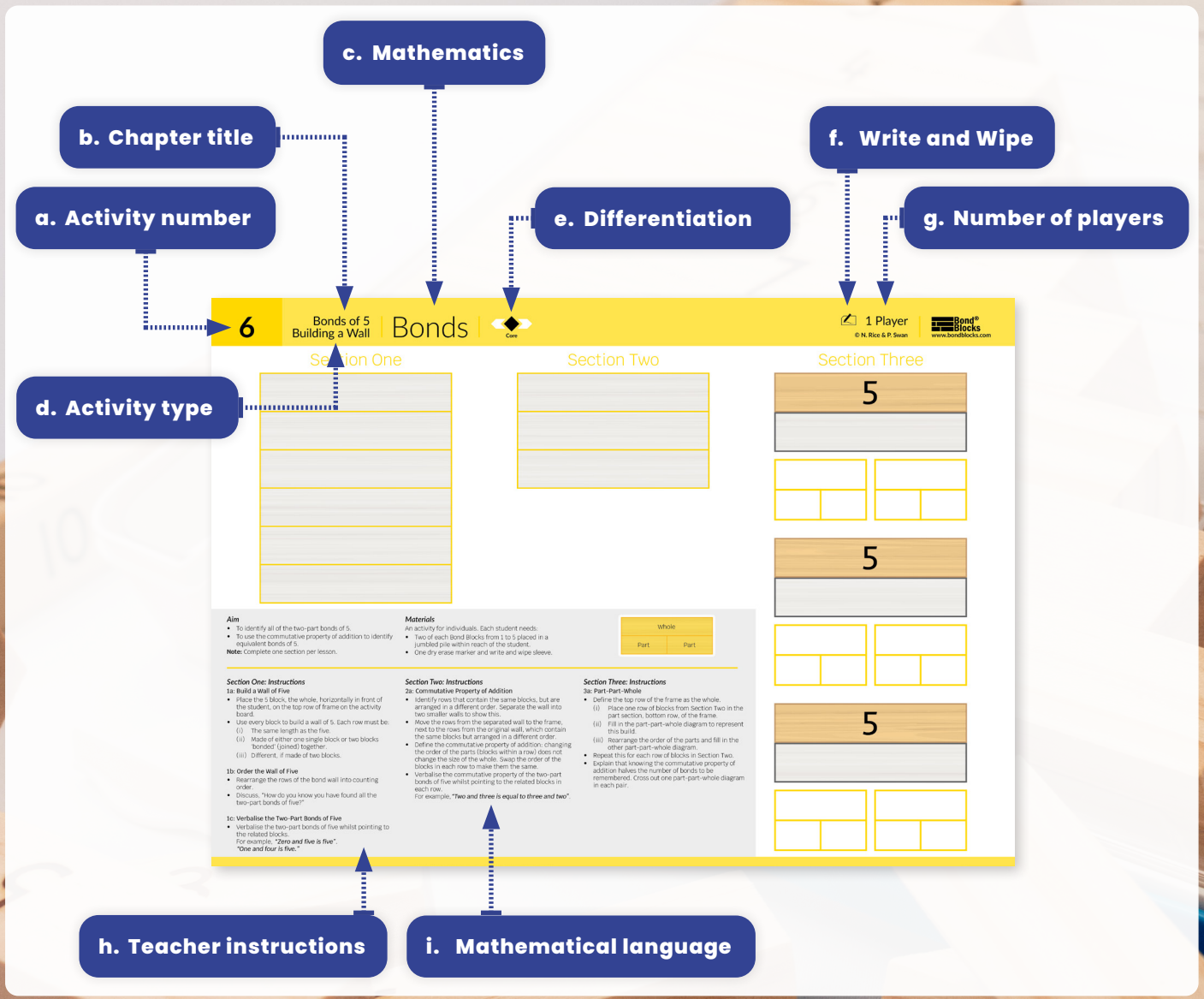
This is an Implementation Guide for **using Bond Blocks at tier one**.

There is a separate Implementation Guide for using Bond Blocks at tiers two and three.

General Implementation Instructions

Activity Boards

Every Bond Block Core Activity is completed on one or more boards.



a. Activity Number

Activity boards are numbered from 1 to 71. However, some activity numbers are repeated where sections span multiple boards.

b. Chapter Title

The Chapter Title for this activity board identifies the set of bonds being focussed on.

c. Mathematics

This part of the activity board title indicates the mathematics involved. The mathematics is elaborated on the activity's web page. These can be used to create specific learning intentions.

d. Activity Type

Bond Blocks chapters feature a similar progression of activities. These are identified here.

e. Differentiation

The activity boards are differentiated.

- **Core** Activity boards have the rotated square coloured in black.
- The icon is for **'a little easier'** board has the left arrow in black. Not all students will use this board.
- The icon is for **'a little harder'** board has the right arrow in black. Not all students will use this board.

f. Write and Wipe

The 'Write and Wipe' symbol indicates that a dry erase marker and write and wipe sleeve are needed for this activity board to complete the written component.

g. Number of Players

Approximately one-quarter of the activities are individual. One Player activities are often split into sections.

Approximately three-quarters of the activities are paired activities. Two Player activities are usually very quick and can be completed in 3 minutes. Students will be able to play multiple rounds in the eight minute session.

h. Teacher Instructions

The lightly shaded part of the board, with very small font, is for the teacher. This section contains the Activity:

- Aim
- Materials
- Instructions

i. Mathematical Language

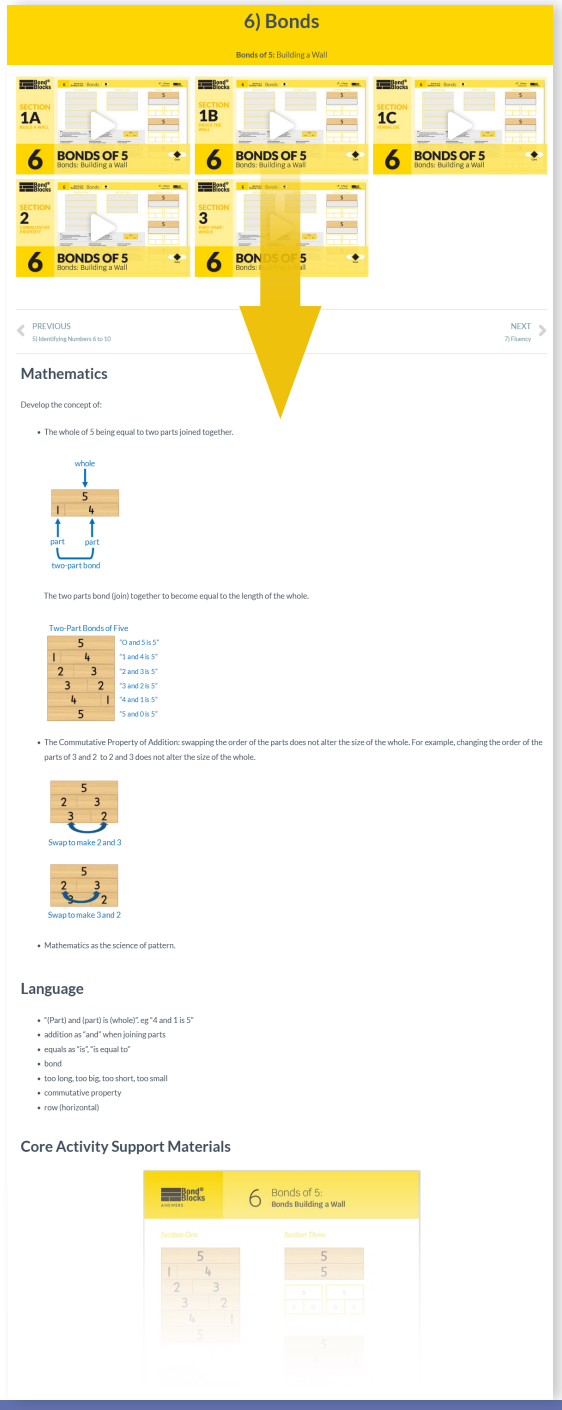
The mathematical language to be used is specified on every board in ***italics bold*** in the Instructions written on the board. It is also listed on the web-page of each activity.

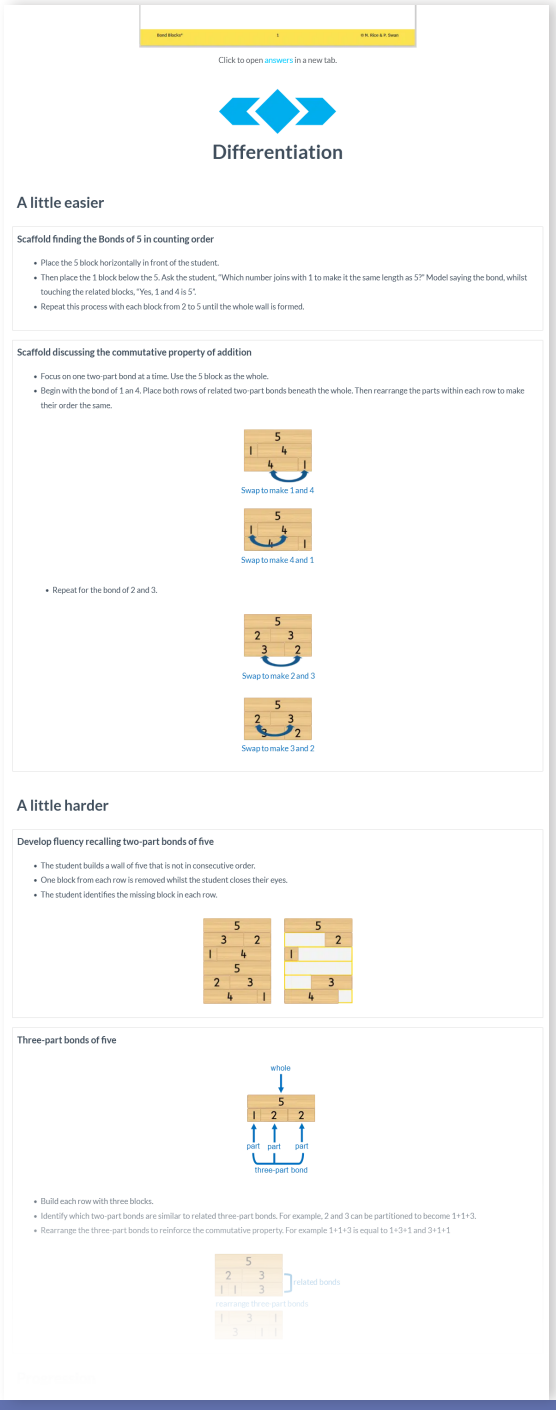
Activity Web Pages

Each activity has its own web page that contains:

- A **video** modelling the activity. These have been made to show to the students so that they receive consistent teaching from year to year.
- **Activity notes** specifying the **mathematical concepts** and **mathematical language**.
- **Differentiation** suggestions to make the activity either a little easier or a little harder.
- Links to relevant pages of **Teacher Notes** for more in depth information about the mathematical concept. These are useful for ongoing professional learning.

Scroll down below the video on each activity web page to find these resources.

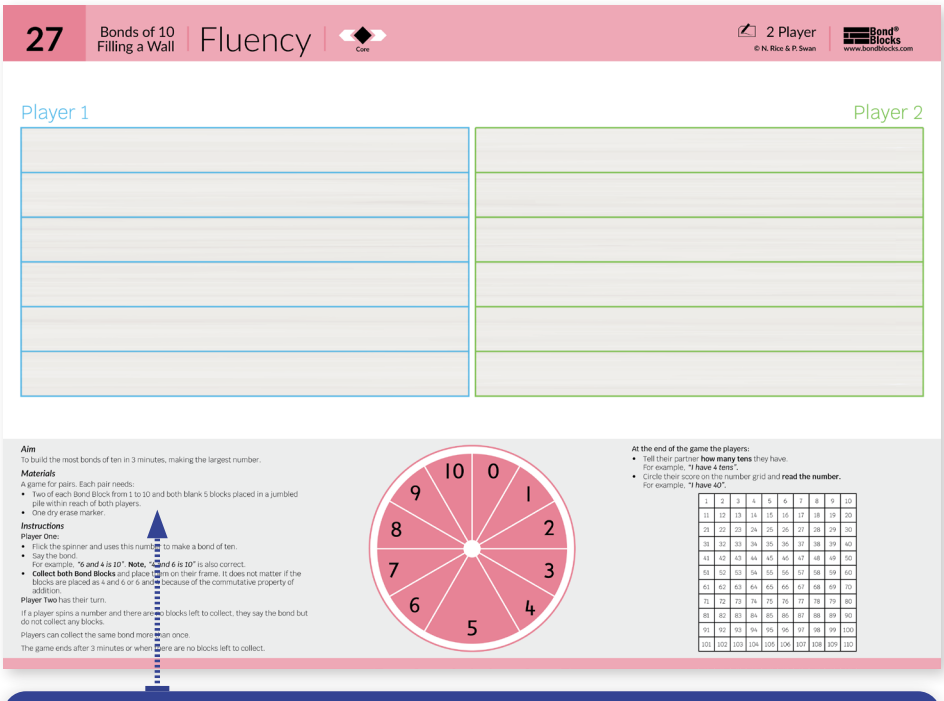




Take Out the Specified Blocks Only

Every Bond Block Core Activity Board can be completed with one set of wooden Bond Blocks. On each activity board there is a "Materials" heading that lists the specific blocks needed for that board. Students should begin by taking out the blocks listed on the activity board under the heading Materials and ONLY these blocks. After this students should shut the lid on the case so they cannot access the other blocks. Some students find storing the box of blocks on the floor under their chair whilst they are completing the activity helps to reduce visual distraction.

If students do not follow this routine they can become distracted and build towers with the blocks instead of focusing on the activity. Also, many of the activities require the students to use every block listed under the Materials heading on the board. If students have access to the whole box of blocks the activity won't work.



"A game for pairs. Each pair needs:
- Two of each Bond Block from 1 to 10 and both blank 5 blocks placed in a jumbled pile within reach of both players."

The materials list will often specify placing the specified blocks required for the activity in a **"jumbled pile"**. Following this instruction is essential. If the specified blocks are taken out of the box and placed on the desk ready for play, in the same order as they were in the box, the students will not have to do any thinking. The blocks will already be organised in the two-part bonds for them!

Packing Away

It is important that the students are taught to pack away the blocks at the end of the activity. The template inside the box was included to help make sure every block is returned to the box at the end of the activity.

Initially students will need help but eventually they will grow in independence and be able to do this by themselves. Students will need to be taught to do the clips up on the box after packing away, otherwise all the blocks will end up on the floor when they pick up the block case. They quickly learn to listen for the 'click' noise of the clips securing shut.

Packing away the blocks helps students develop consideration for others who will use the blocks after them and for their environment.

The template inside the box includes numbers and lines to help students place the blocks away in the correct places.

Printing Activity Boards

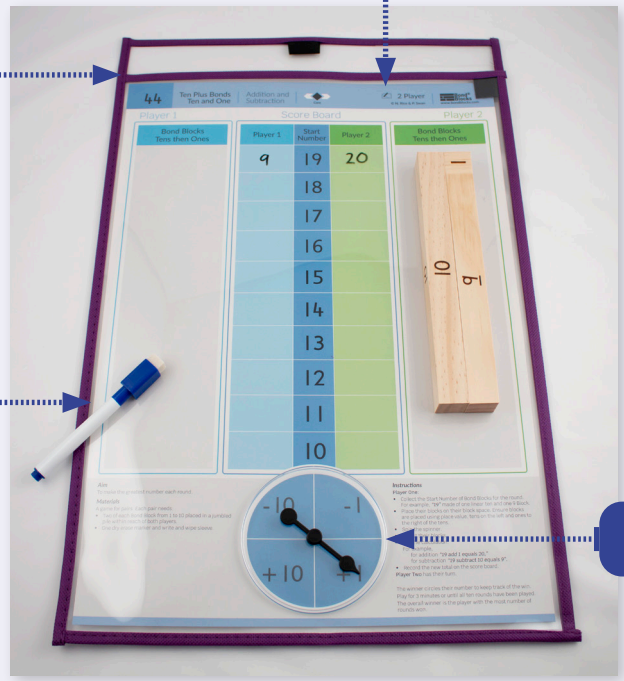
Print the A3 Activity Boards for student use from the PDF file located on the **wooden thumbdrive**.
Please save this onto your school drive. When printing please:

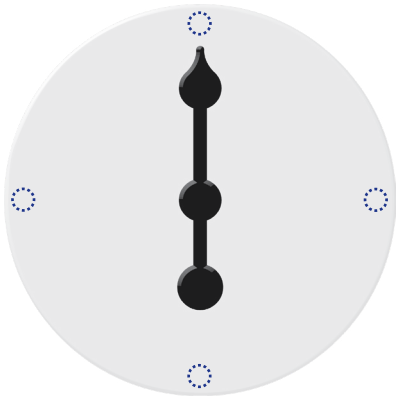
- Use **colour**. The system is colour coded. Do not print in black and white.
- Ensure your printer is set to **'actual size'** or **'100% scale'**. If it is set to the default 'shrink to fit' the boards will look right until you put the blocks on. Then you will realise they don't fit.
- Print 1× number of students for **Individual Activity Boards**. For example, 24 of each.
- Print half × number of students for **Pair Activity Boards**. For example, 12 of each.

Write and Wipe Sleeves

Place the printed copies of the activity boards that students use inside a write and wipe sleeve.

The 'Write and Wipe' symbol indicates that a **dry erase marker and write and wipe sleeve** are needed for this activity board as it contains a written component or makes use of the pen in some way.





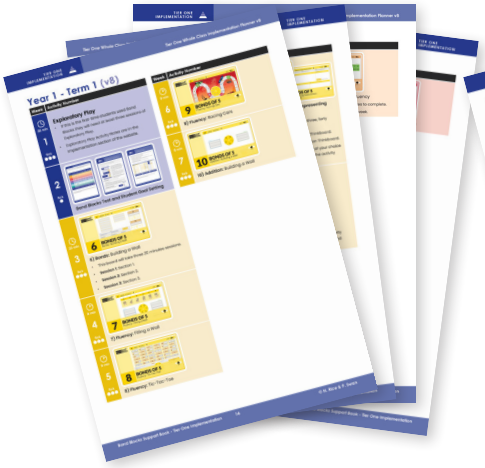
Spinners

Included with each spinner are four silicone feet. Place these at 12, 3, 6 and 9 o'clock positions. These feet 'stick' to the plastic on the write and wipe sleeve and stop the spinner from sliding around when it is flicked.

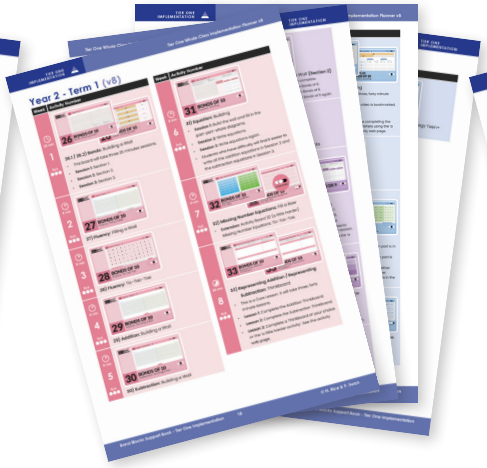
Tier One Whole Class Teaching Implementation

Tier One Implementation

- The Tier One Implementation Planner has been written for **Whole Class Implementation** in Year 1, 2 and 3.
- **The planner is a guide**. Please use teacher judgement to adapt the implementation to suit students.
- This planner has NOT been written for Bond Blocks as Intervention at a tier two or three level.
  The 'Counting to 10 and 20' chapter is Foundation curriculum and is used for Intervention. Therefore, it does not feature in this planner.
- The planners have activities planned for approximately **eight out of the ten weeks** for each term. This is to account for lost teaching time such as settling in at the start of term and special events.



Year 1 Whole Class Implementation Planner



Year 2 Whole Class Implementation Planner

Year 3 Whole Class Implementation Planner

Tier One Teaching Routine

As a general guide students complete **one Bond Block Core Kit activity board per week**, repeating it **three times** to develop fluency. This occurs during the first 8 minutes of the lesson during the mental maths or warm up section of the lesson.

i. **Session 1:** Students watch the **video** with their teacher.
   The teacher reinforces one key message from the video. For example, specific language. The students complete the activity once.

ii. **Session 2:** The teacher starts the session by restating the one key message they will be looking for while the students are working. Students repeat the activity to develop fluency.

iii. **Session 3:** The teacher states the mathematical focus for the activity (stated on the web page). For example, "In this activity we are thinking about the two-part bonds of 6". Students repeat the activity again.

Occasionally some activities will take 20 minutes, three times per week, instead of the usual 8 minutes.

These activities are marked in the planner as a **20 min Session**.

Core Lessons

A small number of activities are marked in the planner as **Core Lessons**. They will take three, forty minute lessons that week. These activities focus on understanding and require explicit teaching. Students are required to use mathematical language in a specific way. An "I do, You do, We do" approach works well in these lessons. For more information please refer to the Teacher Note **'Using Mathematical Language'**.

Another reason Core Lessons were introduced to the Core Kit was because Version 9 of the Australian Curriculum moved several significant content descriptors from Year 3 to Year 2. Therefore, more time is needed to cover all of the content.

Core Lessons are often One Player Activities. During One Player Activities in a whole class setting students share one set of blocks per pair. Students take turns using the blocks to complete each activity.

Please be guided by the students. It they are getting bored, and you think they have understood, then move on. The bonds will be repeated in the fluency games that follow this. Keeping a positive disposition during sessions is important.

Icons

The planner includes a number of icons.

Mental Maths/Warm Up Session

8 min 20 min

How long each session is, in that week.

Core Lesson

40 min

How long each lesson is, in that week.

Tracking

tick

Keep track of completed sessions each week or use a monitoring sheet.

Establishing Routines

In this first chapter of Tier One activities there is a huge amount of learning that takes place. Students have to learn:

- a new routine of a Bond Blocks lesson,
- lots of mathematical language,
- how to complete Bond Block activities,
- and the targeted mathematical concepts.

Initially, in a whole class setting, the activities will take much longer than the allocated 8 minutes. It is well worth spending extra time this term establishing good routines. Do not feel pressured to rush to get through the content. If this means that the class does not finish the allocated the chapters by the end of Year One it is not a problem. It is better to work at the rate of the students than rush. The teacher in Year Two will pick up from the class finished and continue. The Year Two teacher will in turn hand over to the Year Three teacher.

The good news is that it gets easier. Each chapter follows a similar structure and repeats relevant activities with a small increase in difficulty. After completing a couple of chapters, students will complete the activities in approximately 10 minutes. This is 8 minutes of focused Bond Block time and a small amount of time for transitions. Teachers in subsequent years will reap the rewards of the Year One teacher's hard work establishing these routines.

Bond® Blocks IMPLEMENTATION

Tier One Whole Class Implementation Planner v8

Year 1 v8

Term 1 7 weeks	Exploratory Play	Test
	Bonds of 5	Activities 6 to 10
Term 2 5 weeks	Bonds of 5	Activities 11 to 15
Term 3 6 weeks	Doubling and Halving to 10	Activities 16 to 20
Term 4 6 weeks	Five Plus Bonds	Activities 21 to 25

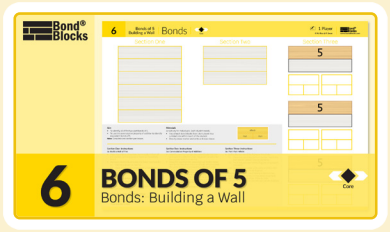
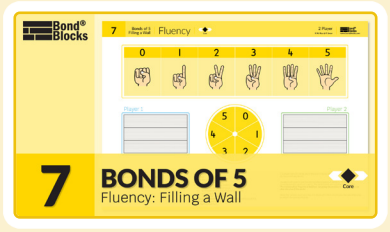
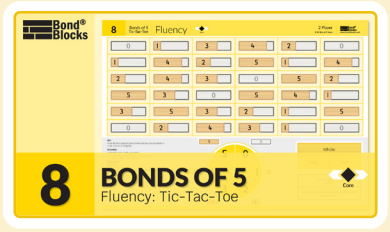
Year 2 v8

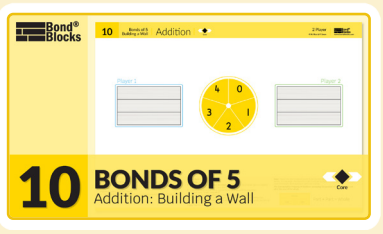
Term 1 8 weeks	Bonds of 10	Activities 26 to 33
Term 2 8 weeks	Bonds of 6, 7, 8, 9	Activities 34 to 40
Term 3 9 weeks	Ten Plus Bonds (Bonds to 20)	Activities 41 to 49
Term 4 6 weeks	Ten Plus Bonds (Bridging Ten Addition)	Activities 50 to 52

Year 3 v8

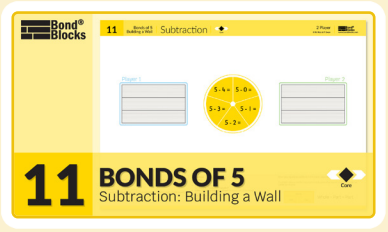
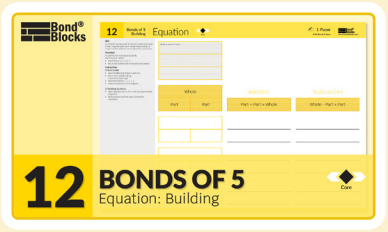
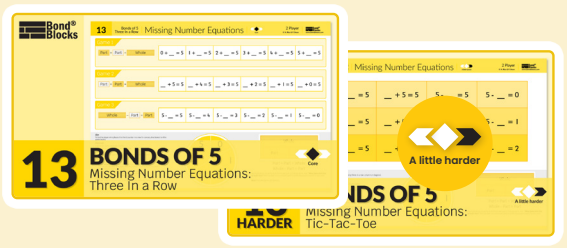
Term 1 8 weeks	Ten Plus Bonds (Bridging Ten Subtraction)	Activities 53 to 56
Term 2 8 weeks	Doubling and Halving to 20	Activities 57 to 63
Term 3 8 weeks	Bonds of 11 to 20	Activities 64 to 69
Term 4 4 weeks	Bonds of 11 to 20	Activities 70 to 71

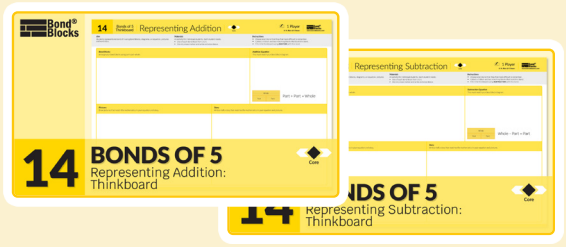
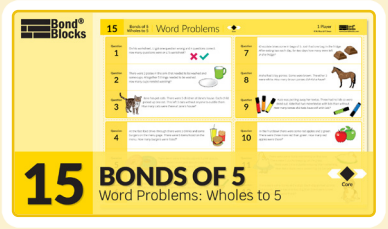
Year 1 - Term 1 (v8)

Week	Activity Number
20 min 1 tick	**Exploratory Play** • If this is the first-time students used Bond Blocks they will need at least three sessions of Exploratory Play. • Exploratory Play Activity Notes are in the Implementation section of the website.
2 tick	 **Bond Blocks Test and Student Goal Setting**
40 min 3 tick	 **6) Bonds:** Building a Wall • This board will take three 40 minutes sessions. • **Session 1:** Section 1. • **Session 2:** Section 2. • **Session 3:** Section 3.
8 min 4 tick	 **7) Fluency:** Filling a Wall
8 min 5 tick	 **8) Fluency:** Tic-Tac-Toe

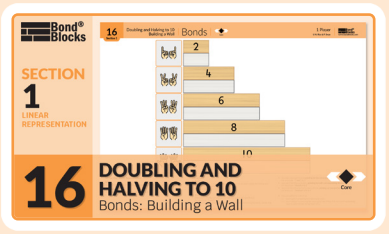
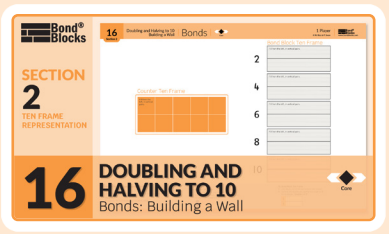
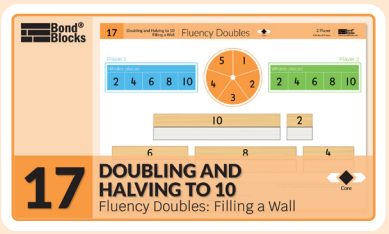
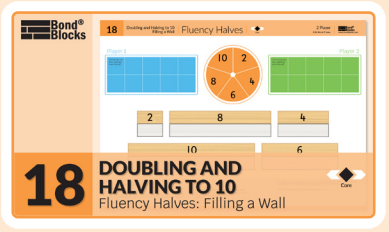
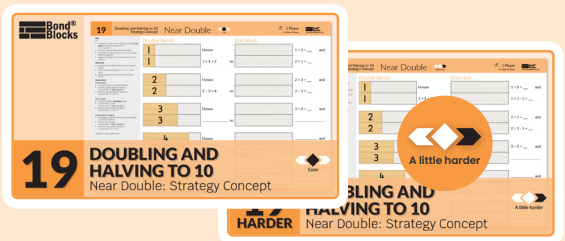
Week	Activity Number
8 min 6 tick	 **9) Fluency:** Racing Cars
8 min 7 tick	 **10) Addition:** Building a Wall

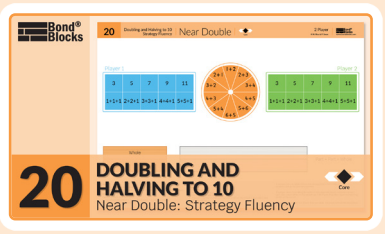
Year 1 - Term 2 (v8)

Week	Activity Number
8 min 1 tick ●●●	 **11) Subtraction:** Building a Wall
8 min 2 tick ●●●	 **12) Equation:** Building • **Session 1:** Build the wall and fill in the part-part-whole diagrams. • **Session 2:** Write equations. • **Session 3:** Write equations again. • Students who have difficulty will find it easier to write all the addition equations in Session 2 and the subtraction equations in Session 3.
8 min 3 tick ●●●	 **13) Missing Number Equations:** Three In a Row **(2023 Version)** • **Session 1:** Play Game 1. • **Session 2:** Play Game 2. • **Session 3:** Play Game 3. • **Extension:** Activity Board 13 (a little harder) Missing Number Equations: Tic-Tac-Toe. **(2022 Version)** Refer to the activity's web page.

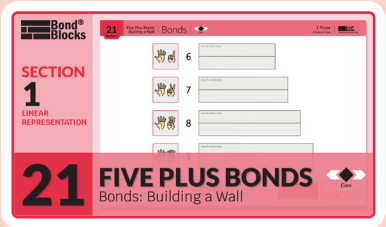
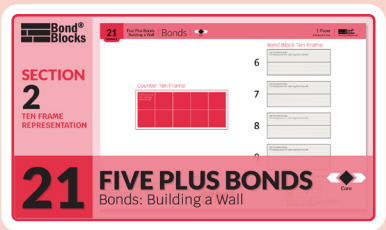
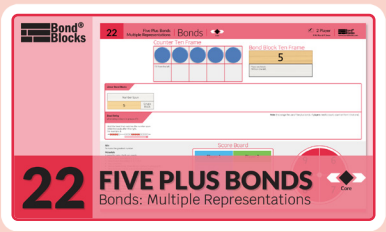
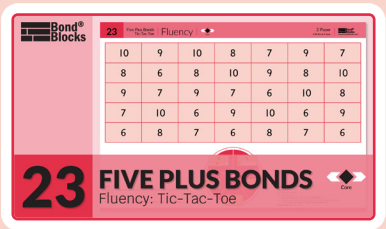
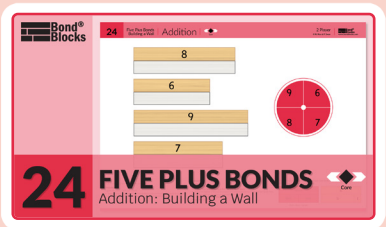
Week	Activity Number
40 min 4 tick ●●●	 **14) Representing Addition / Representing Subtraction:** Thinkboard • This is a Core Lesson. It will take three, forty minute lessons. • **Lesson 1:** Complete the Addition Thinkboard. • **Lesson 2:** Complete the Subtraction Thinkboard. • **Lesson 3:** Complete a Thinkboard of your choice or the 'a little harder activity'. See the activity web page.
40 min 5 tick ●●●	 **15) Word Problems:** Wholes to 5 • This is a Core Lesson. It will take three, forty minute lessons. • Please read the instructions on the activity web page about cutting up the cards and differentiation activities.

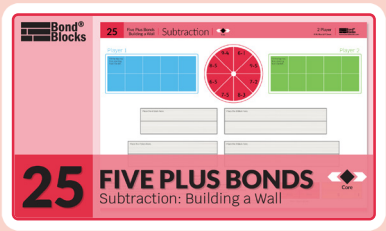
Year 1 - Term 3 (v8)

Week	Activity Number
20 min 1 tick	 **16.1) Bonds:** Building a Wall **(Section 1)** • This board will take 20 minutes to complete. • Complete it three times this week.
20 min 2 tick	 **16.2) Bonds:** Building a Wall **(Section 2)** • This board will take 20 minutes to complete. • Complete it three times this week.
8 min 3 tick	 **17) Fluency Doubles:** Filling a Wall
8 min 4 tick	 **18) Fluency Halves:** Filling a Wall
20 min 5 tick	 **19) Near Double:** Strategy Concept • **Session 1:** Core activity board. (20 min) • **Session 2:** Core activity board. (20 min) • **Session 3:** Activity Board 19 (a little harder) Near Double: Strategy Concept. (20 min)

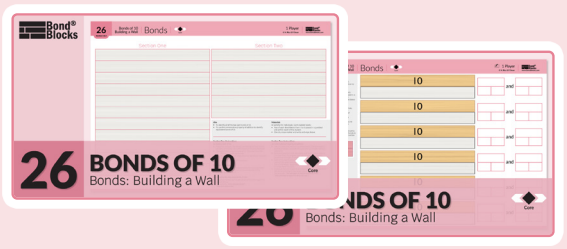
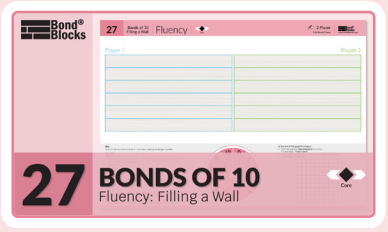
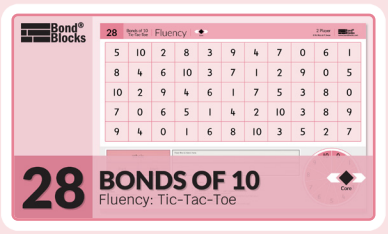
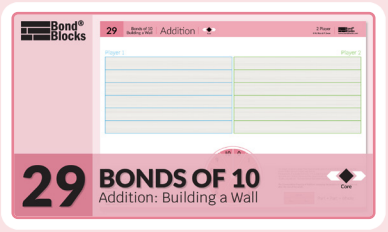
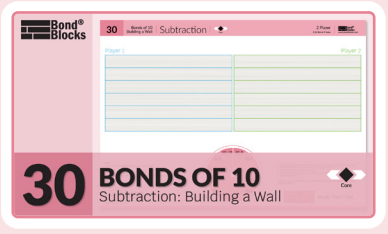
Week	Activity Number
20 min 6 tick	 **20) Near Double:** Strategy Fluency • This board will take 20 minutes to complete. • Complete it three times this week.

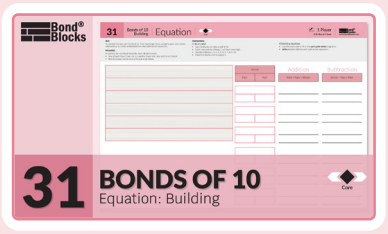
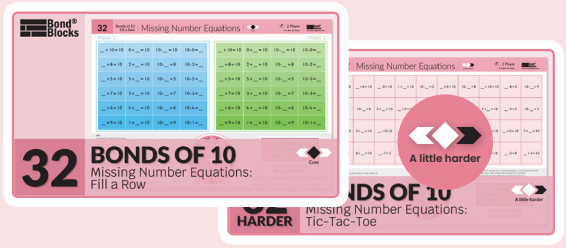
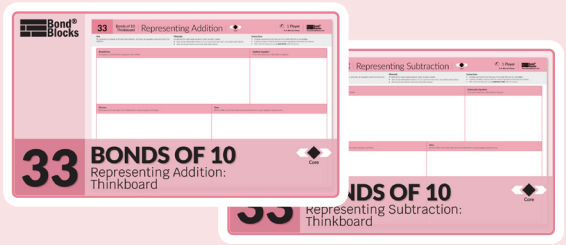
Year 1 - Term 4 (v8)

Week	Activity Number
20 min 1 tick ●●●	 **21.1) Bonds:** Building a Wall **(Section 1)** • This board will take 20 minutes to complete. • Complete it three times this week.
20 min 2 tick ●●●	 **21.2) Bonds:** Building a Wall **(Section 2)** • This board will take 20 minutes to complete. • Complete it three times this week.
8 min 3 tick ●●●	 **22) Bonds:** Multiple Representations
8 min 4 tick ●●●	 **23) Fluency:** Tic-Tac-Toe
8 min 5 tick ●●●	 **24) Addition:** Building a Wall

Week	Activity Number
8 min 6 tick ●●●	 **25) Subtraction:** Building a Wall

Year 2 - Term 1 (v8)

Week	Activity Number
20 min 1 tick ●●●	 **26.1 / 26.2) Bonds:** Building a Wall • This board will take three 20 minutes sessions. • **Session 1:** Section 1. • **Session 2:** Section 2. • **Session 3:** Section 3.
8 min 2 tick ●●●	 **27) Fluency:** Filling a Wall
8 min 3 tick ●●●	 **28) Fluency:** Tic-Tac-Toe
8 min 4 tick ●●●	 **29) Addition:** Building a Wall
8 min 5 tick ●●●	 **30) Subtraction:** Building a Wall

Week	Activity Number
8 min 6 tick ●●●	 **31) Equation:** Building • **Session 1:** Build the wall and fill in the part-part-whole diagrams. • **Session 2:** Write equations. • **Session 3:** Write equations again. • Students who have difficulty will find it easier to write all the addition equations in Session 2 and the subtraction equations in Session 3.
8 min 7 tick ●●●	 **32) Missing Number Equations:** Fill a Row • **Extension:** Activity Board 32 (a little harder) Missing Number Equations: Tic-Tac-Toe.
40 min 8 tick ●●●	 **33) Representing Addition / Representing Subtraction:** Thinkboard • This is a Core Lesson. It will take three, forty minute lessons. • **Lesson 1:** Complete the Addition Thinkboard. • **Lesson 2:** Complete the Subtraction Thinkboard. • **Lesson 3:** Complete a Thinkboard of your choice or the 'a little harder activity'. See the activity web page.

Year 2 - Term 2 (v8)

Chapter 6) Bonds of 6, 7, 8, 9

Students have learnt several Bonds of 6, 7, 8 and 9 in the previous chapters 'Doubling and Halving to 10' and 'Five Plus Bonds'.

The most difficult bonds left to learn in this Chapter are:

- 6 as 2 and 4
- 7 as 3 and 4
- 8 as 2 and 6
- 9 as 2 and 7
- 9 as 3 and 6

For this reason students do not practice every bond, every activity. They are spread so as students have more practice with the more difficult bonds.

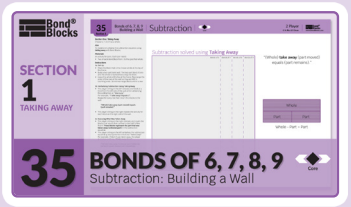
Week	Activity Number

40 min · 1 · tick ●●●

34) Bonds: Building a Wall

- This is a Core Lesson. Complete all three sections in a forty minute maths lesson.
- **Lesson 1:** Complete this board for Bonds of 6.
- **Lesson 2:** Complete this board for Bonds of 7.
- **Lesson 3:** Complete this board for Bonds of 8.
- **Early Finishers:** Complete this board for Bonds of 9.

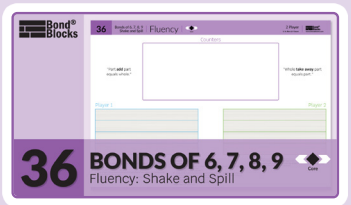
20 min · 2 · tick ●●●



35.1) Subtraction: Building a Wall (Section 1)

- This board will take 20 minutes to complete.
- **Session 1:** Complete this board for Bonds of 6.
- **Session 2:** Complete this board for Bonds of 7.
- **Session 3:** Complete this board for Bonds of 7 again.

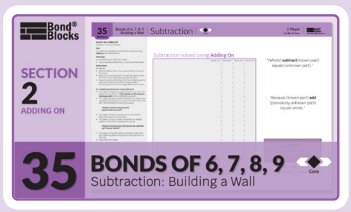
8 min · 3 · tick ●●●



36) Fluency: Shake and Spill

- This board has been placed here on purpose to break up Activity 35 Subtraction Section One and Two.

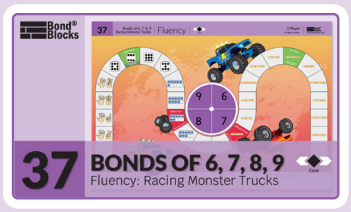
8 min · 4 · tick ●●●



35.2) Subtraction: Building a Wall (Section 2)

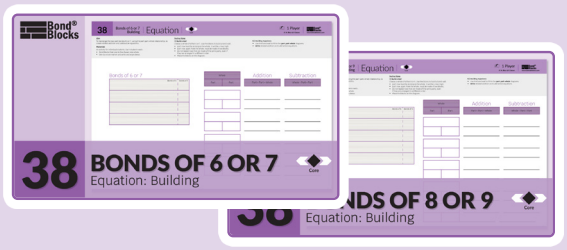
- This board will take 20 minutes to complete.
- **Session 1:** Complete this board for Bonds of 8.
- **Session 2:** Complete this board for Bonds of 9.
- **Session 3:** Complete this board for Bonds of 9 again.

8 min · 5 · tick ●●●



37) Fluency: Racing Monster Trucks

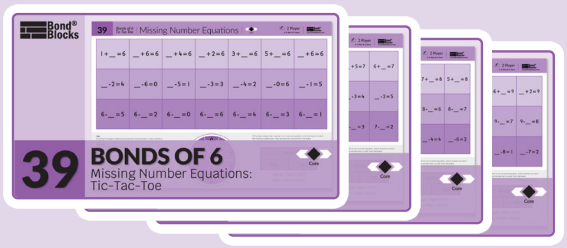
20 min · 6 · tick ●●●



38) Equation: Building

- This board will take 20 minutes to complete.
- **Session 1:** Complete this board for Bonds of 7.
- **Session 2:** Complete this board for Bonds of 8.
- **Session 3:** Complete this board for Bonds of 9.
- The Bonds of 6 board is the easiest. Some students may benefit from completing this board each session.
- Students who require extension can complete the 'a little harder' activity – atypical arrangement.

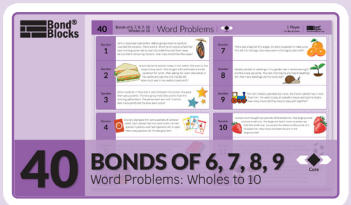
8 min · 7 · tick ●●●



39) Missing Number Equations: Tic-Tac-Toe

- **Session 1:** Complete this board for Bonds of 7.
- **Session 2:** Complete this board for Bonds of 8.
- **Session 3:** Complete this board for Bonds of 9.
- The Bonds of 6 board is the easiest. Some students may benefit from completing this board each session.

40 min · 8 · tick ●●●



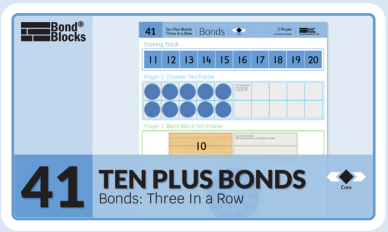
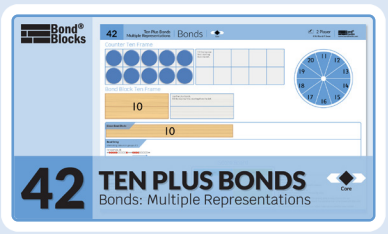
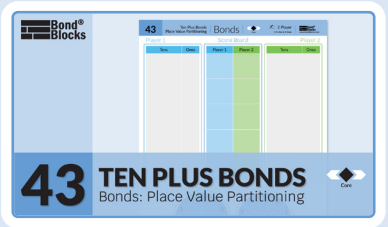
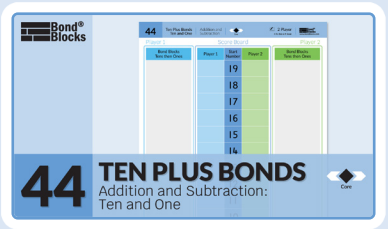
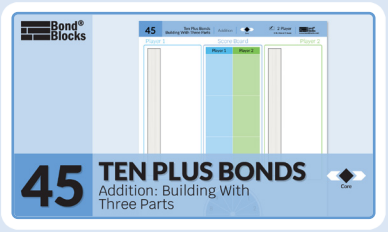
40) Word Problems: Wholes to 10

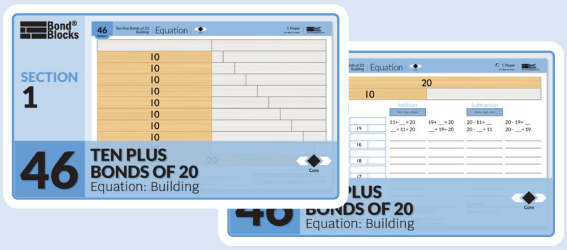
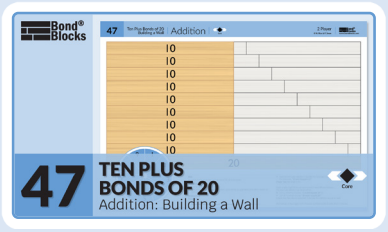
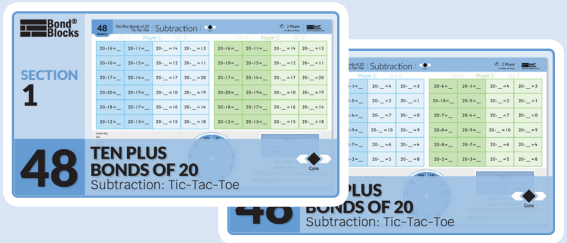
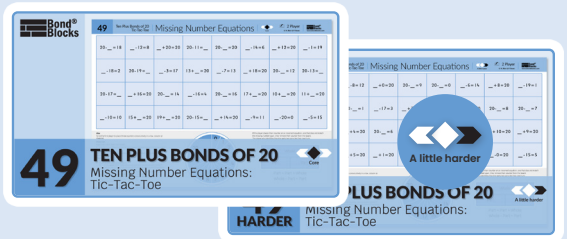
- This is a Core Lesson. It will take three, forty minute lessons. Please read activity web page instructions.

Year 2 - Term 3 (v8)

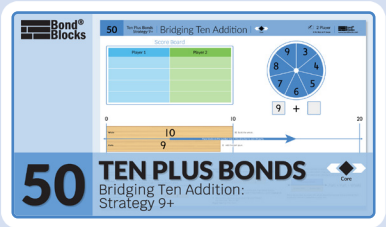
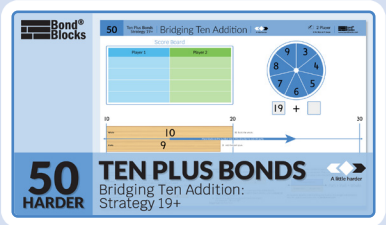
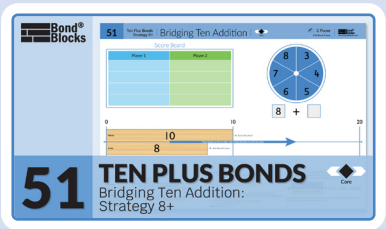
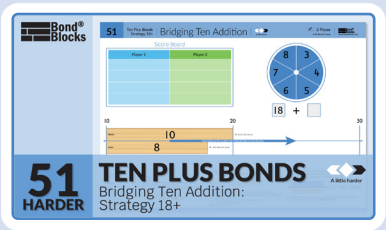
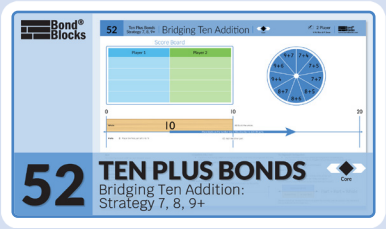
Chapter 7) Ten Plus Bonds:

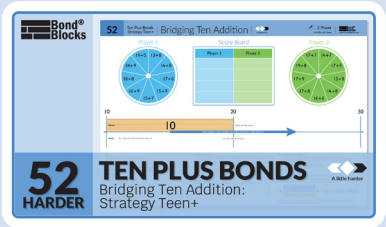
Activities 41 to 44 are revision of Year 1 content. These activities are pre-requisite knowledge for Activities 45 to 48.

Week	Activity Number
8 min 1 tick ●●●	 **41) Bonds:** Three In a Row
8 min 2 tick ●●●	 **42) Bonds:** Multiple Representations
8 min 3 tick ●●●	 **43) Bonds:** Place Value Partitioning
8 min 4 tick ●●●	 **44) Addition and Subtraction:** Ten and One
8 min 5 tick ●●●	 **45) Addition:** Building With Three Parts

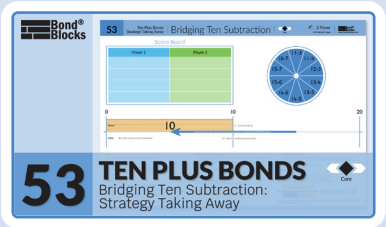
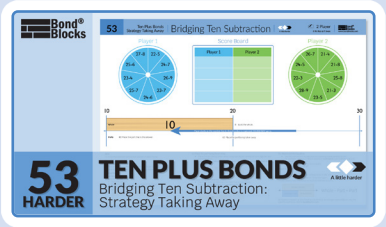
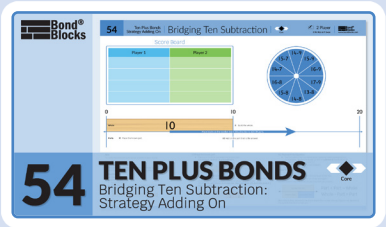
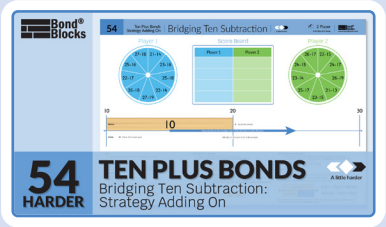
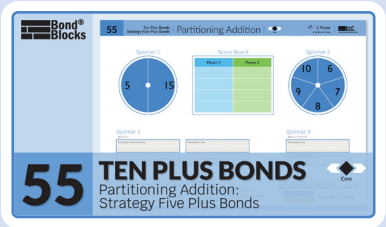
Week	Activity Number
40 min 6 tick ●●●	 **46.1 / 46.2) Equation:** Building • This is a Core Lesson. It will take three, forty minute lessons. • **Lesson 1:** Section One board. The video is bookmarked. Practise after each instruction. • **Lesson 2:** Section Two board. • **Lesson 3:** Some students will still be completing the Section Two board. Extend early finishers using the 'a little harder' activities. See the activity web page.
8 min 7 tick ●●●	 **47) Addition:** Building a Wall
8 min 8 tick ●●●	 **48.1 / 48.2) Subtraction:** Tic-Tac-Toe • **Session 1:** Section One Game A (the unknown part is in the typical answer position). • **Session 2:** Section One Game B (the unknown part is not in the typical answer position). • **Session 3:** Section Two. Students can choose either Game A (with the unknown in the typical answer position) or Game B (where the unknown part is in the other position).
8 min 9 tick ●●●	 **49) Missing Number Equations:** Tic-Tac-Toe • **Session 1:** Core activity board. • **Session 2:** Core activity board. • **Session 3:** Activity Board 49 (a little harder) Missing Number Equations: Tic-Tac-Toe.

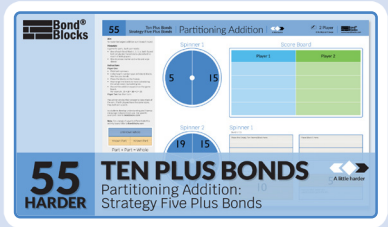
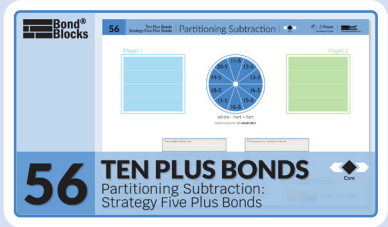
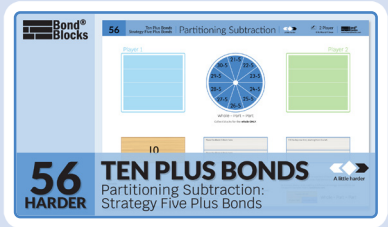
Year 2 - Term 4 (v8)

Week	Activity Number
8 min 1 tick	 **50) Bridging Ten Addition:** Strategy 9+
8 min 2 tick	 **50) Bridging Ten Addition:** Strategy 19+ **(a little harder)**
8 min 3 tick	 **51) Bridging Ten Addition:** Strategy 8+
8 min 4 tick	 **51) Bridging Ten Addition:** Strategy 18+ **(a little harder)**
8 min 5 tick	 **52) Bridging Ten Addition:** Strategy 7, 8, 9+

Week	Activity Number
8 min 6 tick	 **52) Bridging Ten Addition:** Strategy Teen+ **(a little harder)**

Year 3 - Term 1 (v8)

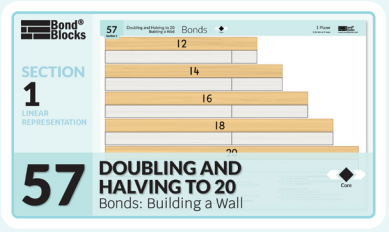
Week	Activity Number
8 min 1 tick	 **53) Bridging Ten Subtraction:** Strategy Taking Away
8 min 2 tick	 **53) Bridging Ten Subtraction:** Strategy Taking Away **(a little harder)**
8 min 3 tick	 **54) Bridging Ten Subtraction:** Strategy Adding On
8 min 4 tick	 **54) Bridging Ten Subtraction:** Strategy Adding On **(a little harder)**
8 min 5 tick	 **55) Partitioning Addition:** Strategy Five Plus Bonds

Week	Activity Number
8 min 6 tick	 **55) Partitioning Addition:** Strategy Five Plus Bonds **(a little harder)**
8 min 7 tick	 **56) Partitioning Subtraction:** Strategy Five Plus Bonds
8 min 8 tick	 **56) Partitioning Subtraction:** Strategy Five Plus Bonds **(a little harder)**

Year 3 - Term 2 (v8)

Week	Activity Number

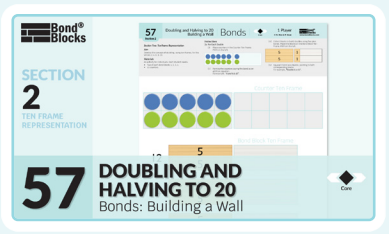
20 min · 1 · tick



57.1) Bonds: Building a Wall **(Section 1)**

- This board will take 20 minutes to complete.
- Complete it three times this week.

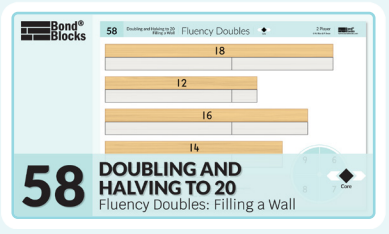
20 min · 2 · tick



57.2) Bonds: Building a Wall **(Section 2)**

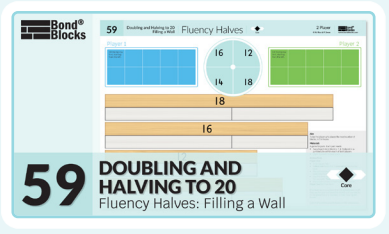
- This board will take 20 minutes to complete.
- Complete it three times this week.

8 min · 3 · tick



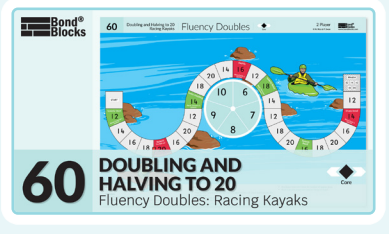
58) Fluency Doubles: Filling a Wall

8 min · 4 · tick



59) Fluency Halves: Filling a Wall

8 min · 5 · tick



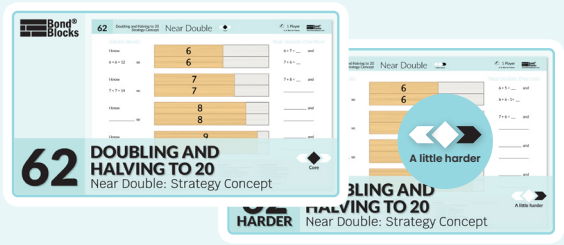
60) Fluency Doubles: Racing Kayaks

Week	Activity Number

8 min · 6 · tick

61) Fluency Halves: Racing Snowboards

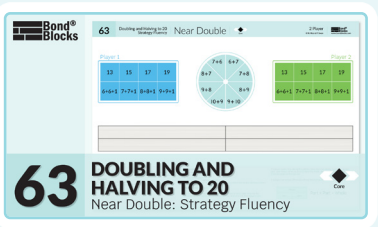
20 min · 7 · tick



62) Near Double: Strategy Concept

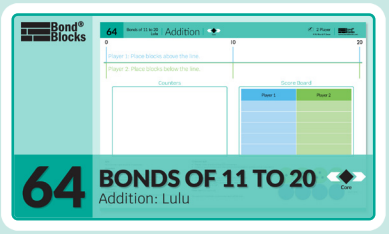
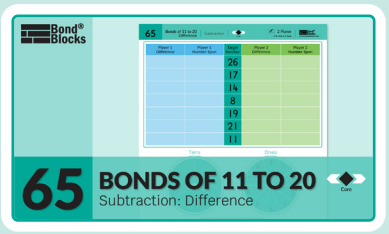
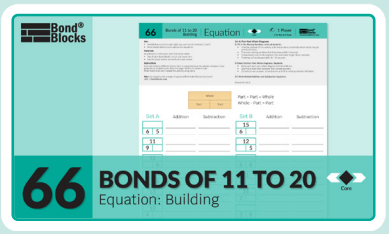
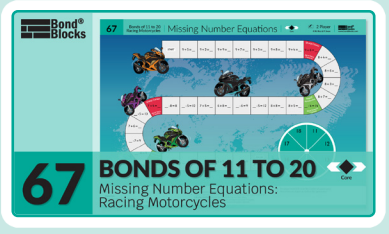
- **Session 1:** Core activity board. (20 min)
- **Session 2:** Core activity board. (20 min)
- **Session 3:** Activity Board 19 (a little harder) Near Double: Strategy Concept. (20 min)

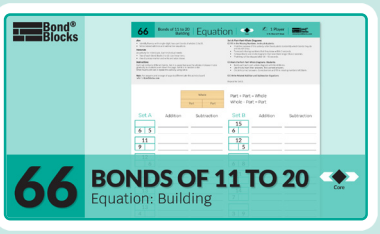
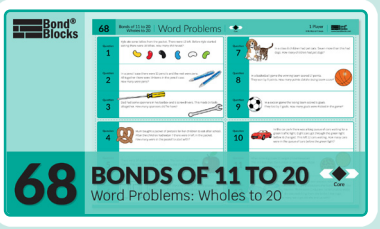
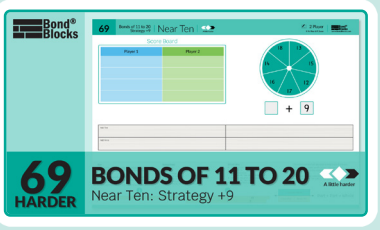
8 min · 8 · tick



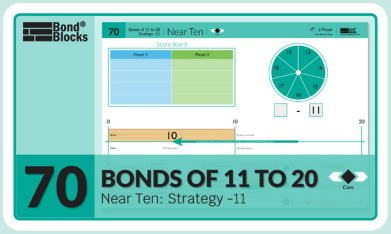
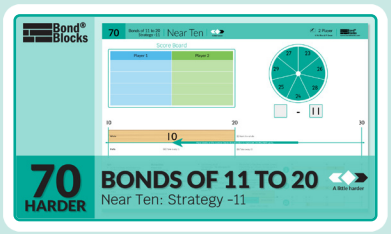
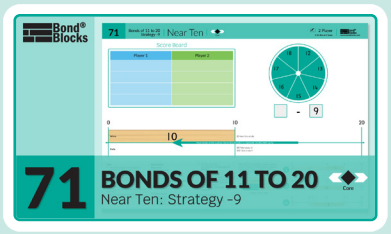
63) Near Double: Strategy Fluency

Year 3 - Term 3 (v8)

Week	Activity Number
8 min 1 tick	 **64) Addition:** Lulu
8 min 2 tick	 **65) Subtraction:** Difference
8 min 3 tick	 **66) Equation:** Building **(Set A)** • **Session 1:** Fill in the part-part-whole diagrams. • **Session 2:** Write equations. • **Session 3:** Finish writing equations. • Students who have difficulty will find it easier to write all the addition equations in Session 2 and the subtraction equations in Session 3. • Students who require extension can complete the 'a little harder' activity – atypical arrangement. See the activity web page.
8 min 4 tick	 **67) Missing Number Equations:** Racing Motorcycles

Week	Activity Number
8 min 5 tick	 **66) Equation:** Building **(Set B)** • **Session 1:** Fill in the part-part-whole diagrams. • **Session 2:** Write equations. • **Session 3:** Finish writing equations. • Students who have difficulty will find it easier to write all the addition equations in Session 2 and the subtraction equations in Session 3. • Students who require extension can complete the 'a little harder' activity – atypical arrangement. See the activity web page.
40 min 6 tick	 **68) Word Problems:** Wholes to 20 • This is a Core Lesson. It will take three, forty minute lessons. • Please read the instructions on the activity web page about cutting up the cards and differentiation activities.
8 min 7 tick	 **66) Near Ten:** Strategy +9
8 min 8 tick	 **69) Near Ten:** Strategy +9 **(a little harder)**

Year 3 - Term 4 (v8)

Week	Activity Number
8 min 1 tick	 **70) Near Ten:** Strategy -11
8 min 2 tick	 **70) Near Double:** Strategy -11 **(a little harder)**
8 min 3 tick	 **71) Near Ten:** Strategy -9
8 min 4 tick	 **71) Near Ten:** Strategy -9 **(a little harder)**

Australian Curriculum Links (Version 8)

Foundation

	Activity Number	Curriculum Links
Chapter 1) Counting	1) **Forwards 1 to 10:** Building Steps	**Foundation ACMNA001** • Establish understanding of the language and processes of counting by naming numbers in sequences, initially to and from 20, moving from any starting point. **Foundation ACMNA002** • Connect number names, numerals and quantities, including zero, initially up to 10 and then beyond. **Foundation ACMNA003** • Subitise small collections of objects. **Foundation ACMNA289** • Compare, order and make correspondences between collections, initially to 20, and explain reasoning. **Foundation ACMNA005** • Copy, continue and create patterns with objects and drawings. **Year 1 ACMNA012** • Skip count by twos... starting from zero. **Year 1 ACMNA018** • Investigate and describe number patterns formed by skip counting and patterns with objects. **Year 2 ACMNA026** • Investigate number sequences, initially those increasing and decreasing by twos... from any starting point.
	1) **Forwards 10 to 20:** Building Steps *(a little harder)*	
	2) **Number After:** Greater Number	
	2) **Number After:** Greater Number *(a little harder)*	
	3) **Backwards 10 to 1:** Building Steps	
	3) **Backwards 20 to 10:** Building Steps *(a little harder)*	
	4) **Number Before:** Lesser Number	
	4) **Number Before:** Lesser Number *(a little harder)*	
	5) **Identifying Numbers 1 to 5:** Building Steps *(a little easier)*	
	5) **Identifying Numbers 6 to 10:** Building Steps	

Year 1

	Activity Number	Curriculum Links
Chapter 2) Bonds of 5	**6) Bonds:** Building a Wall	**Year 1 ACMNA015** • Represent and solve simple addition and subtraction problems using a range of stategies including counting on, partitioning and rearranging parts. **Year 2 ACMNA029** • Explore the connection between addition and subtraction.
	7) Fluency: Filling a Wall	
	8) Fluency: Tic-Tac-Toe	
	9) Fluency: Racing Cars	
	10) Addition: Building a Wall	
	11) Subtraction: Building a Wall	
	12) Equation: Building *(a little easier)*	
	12) Equation: Building	
	13) Missing Number Equations: Fill a Row *(a little easier)*	
	13) Missing Number Equations: Three In a Row	
	13) Missing Number Equations: Tic-Tac-Toe *(a little harder)*	
	14) Representing Addition: Thinkboard	
	14) Representing Subtraction: Thinkboard	
	15) Word Problems: Whole to 5	

	Activity Number	Curriculum Links
Chapter 3)	**16.1 / 16.2) Bonds:** Building a Wall	**Year 1 ACMNA015** • Represent and solve simple addition and subtraction problems using a range of stategies including counting on, partitioning and rearranging parts.
	17) Fluency Doubles: Filling a Wall	
	18) Fluency Halves: Filling a Wall	
	19) Near Double: Strategy Concept	
	19) Near Double: Strategy Concept *(a little harder)*	
	20) Near Double: Strategy Fluency	

	Activity Number	Curriculum Links
Chapter 4)	**21.1 / 21.2) Bonds:** Building a Wall	**Year 1 ACMNA015** • Represent and solve simple addition and subtraction problems using a range of stategies including counting on, partitioning and rearranging parts.
	22) Bonds: Multiple Representations	
	23) Fluency: Tic-Tac-Toe	
	24) Addition: Building a Wall	
	25) Subtraction: Building a Wall	

Year 2

	Activity Number	Curriculum Links
Chapter 5) Bonds of 10	**26.1 / 26.2) Bonds:** Building a Wall	**Year 2 ACMNA029** • Explore the connection between addition and subtraction. **Year 2 ACMNA030** • Solve simple addition and subtraction problems using a range of efficient mental and written strategies. **Year 2 ACMNA036** • Solve problems by using number sentences for addition or subtraction. **Year 3 ACMNA054** • Recognise and explain the connection between addition and subtraction.
	27) Fluency: Filling a Wall	
	28) Fluency: Tic-Tac-Toe	
	29) Addition: Building a Wall	
	30) Subtraction: Building a Wall	
	31) Equation: Building	
	31) Equation: Building *(a little easier)*	
	32) Missing Number Equations: Fill a Row	
	32) Missing Number Equations: Tic-Tac-Toe *(a little harder)*	
	33) Representing Addition: Thinkboard	
	33) Representing Subtraction: Thinkboard	

	Activity Number	Curriculum Links
Chapter 6) Bonds of 6, 7, 8, 9	**34) Bonds of 6 or 7 – Bonds:** Building a Wall	**Year 2 ACMNA029** • Explore the connection between addition and subtraction. **Year 2 ACMNA030** • Solve simple addition and subtraction problems using a range of efficient mental and written stategies. **Year 2 ACMNA036** • Solve problems by using number sentences for addition or subtraction. **Year 3 ACMNA054** • Recognise and explain the connection between addition and subtraction.
	34) Bonds of 8 or 9 – Bonds: Building a Wall	
	35.1 / 35.2) Subtraction: Building a Wall	
	36) Fluency: Shake and Spill	
	37) Fluency: Racing Monster Trucks	
	38) Bonds of 6 or 7 – Equation: Building	
	38) Bonds of 8 or 9 – Equation: Building	
	39) Bonds of 6 – Missing Number Equations: Tic-Tac-Toe	
	39) Bonds of 7 – Missing Number Equations: Tic-Tac-Toe	
	39) Bonds of 8 – Missing Number Equations: Tic-Tac-Toe	
	39) Bonds of 9 – Missing Number Equations: Tic-Tac-Toe	
	40) Word Problems: Wholes to 10	

Year 2

	Activity Number	Curriculum Links
Chapter 7) Ten Plus Bonds	**41) Bonds:** Three In a Row	**Year 1 ACMNA014** • Count collections to 100 by partitioning numbers using place value. **Year 2 ACMNA029** • Explore the connection between addition and subtraction. **Year 2 ACMNA030** • Solve simple addition and subtraction problems using a range of efficient mental and written stategies. **Year 3 ACMNA054** • Recognise and explain the connection between addition and subtraction.
	42) Bonds: Multiple Representations	
	43) Bonds: Place Value Partitioning	
	44) Addition and Subtraction: Ten and One	
	45) Addition: Building With Three Parts	
	46.1 / 46.2) Equation: Building	
	47) Addition: Building a Wall	
	48.1 / 48.2) Subtraction: Tic-Tac-Toe	
	49) Missing Number Equations: Tic-Tac-Toe	
	49) Missing Number Equations: Tic-Tac-Toe *(a little harder)*	
	50) Bridging Ten Addition: Strategy 9+	
	50) Bridging Ten Addition: Strategy 19+ *(a little harder)*	
	51) Bridging Ten Addition: Strategy 8+	
	51) Bridging Ten Addition: Strategy 18+ *(a little harder)*	
	52) Bridging Ten Addition: Strategy 7, 8, 9+	
	52) Bridging Ten Addition: Strategy Teen+ *(a little harder)*	
	53) Bridging Ten Subtraction: Strategy Taking Away	
	53) Bridging Ten Subtraction: Strategy Taking Away *(a little harder)*	
	54) Bridging Ten Subtraction: Strategy Adding On	
	54) Bridging Ten Subtraction: Strategy Adding On *(a little harder)*	
	55) Partitioning Addition: Strategy Five Plus Bonds	
	55) Partitioning Addition: Strategy Five Plus Bonds *(a little harder)*	
	56) Partitioning Subtraction: Strategy Five Plus Bonds	
	56) Partitioning Subtraction: Strategy Five Plus Bonds *(a little harder)*	

Year 3

	Activity Number	Curriculum Links
Chapter 8) Doubling and Halving to 20	**57.1 / 57.2) Bonds:** Building a Wall	Year 2 **ACMNA030** • Solve simple addition and subtraction problems using a range of efficient mental and written stategies. Year 3 **ACMNA055** • Recall addition facts for single-digit numbers and related subtraction facts to develop increasingly efficient mental strategies for computation.
	58) Fluency Doubles: Filling a Wall	
	59) Fluency Halves: Filling a Wall	
	60) Fluency Doubles: Racing Kayaks	
	61) Fluency Halves: Racing Snowboards	
	62) Near Double: Strategy Concept	
	62) Near Double: Strategy Concept *(a little harder)*	
	63) Near Double: Strategy Fluency	

	Activity Number	Curriculum Links
Chapter 9) Bonds of 11 to 20	**64) Addition:** Lulu	Year 3 **ACMNA054** • Recognise and explain the connection between addition and subtraction. Year 3 **ACMNA055** • Recall addition facts for single-digit numbers and related subtraction facts to develop increasingly efficient mental strategies for computation. Year 4 **ACMNA083** • Find unknown quantities in number sentences involving addition and subtraction and identify equivalent number sentences involving addition and subtraction.
	65) Subtraction: Difference	
	66) Equation: Building	
	67) Missing Number Equations: Racing Motorcycles	
	68) Word Problems: Wholes to 20	
	69) Near Ten: Strategy +9	
	69) Near Ten: Strategy +9 *(a little harder)*	
	70) Near Ten: Strategy -11	
	70) Near Ten: Strategy -11 *(a little harder)*	
	71) Near Ten: Strategy -9	
	71) Near Ten: Strategy -9 *(a little harder)*	

Australian Curriculum (v8) Covered by Bond Blocks

Bond Blocks Addition and Subtraction to 20 covers the highlighted sections of the Australian Curriculum.
australiancurriculum.edu.au/f-10-curriculum/mathematics

Foundation Year Content Descriptions Number and Algebra

Number and place value

- Establish understanding of the language and processes of counting by naming numbers in sequences, initially to and from 20, moving from any starting point **(ACMNA001)**.
- Connect number names, numerals and quantities, including zero, initially up to 10 and then beyond **(ACMNA002)**.
- Subitise small collections of objects **(ACMNA003)**.
- Compare, order and make correspondences between collections, initially to 20, and explain reasoning **(ACMNA289)**.
- Represent practical situations to model addition and sharing **(ACMNA004)**.

Number and place value

- Sort and classify familiar objects and explain the basis for these classifications. Copy, continue and create patterns with objects and drawings **(ACMNA005)**.

Year 1 Content Descriptions Number and Algebra

Number and place value

- Develop confidence with number sequences to and from 100 by ones from any starting point. Skip count by twos, fives and tens starting from zero **(ACMNA012)**.
- Recognise, model, read, write and order numbers to at least 100. Locate these numbers on a number line **(ACMNA013)**.
  * Bond Block focus numbers < 30.
- Count collections to 100 by partitioning numbers using place value **(ACMNA014)**.
- Represent and solve simple addition and subtraction problems using a range of strategies including counting on, partitioning and rearranging parts **(ACMNA015)**.
  - » developing a range of mental strategies for addition and subtraction problems.

Patterns and algebra

- Investigate and describe number patterns formed by skip-counting and patterns with objects **(ACMNA018)**.

Year 2 Content Descriptions Number and Algebra

Number and place value

- Investigate number sequences, initially those increasing and decreasing by twos, threes, fives and tens from any starting point, then moving to other sequences **(ACMNA026)**.
- Recognise, model, represent and order numbers to at least 1000 **(ACMNA027)**.
- Group, partition and rearrange collections up to 1000 in hundreds, tens and ones to facilitate more efficient counting **(ACMNA028)**.
- Explore the connection between addition and subtraction **(ACMNA029)**.
  - » becoming fluent with partitioning numbers to understand the connection between addition and subtraction.
  - » using counting on to identify the missing element in an additive problem.
- Solve simple addition and subtraction problems using a range of efficient mental and written strategies **(ACMNA030)**.
  - » becoming fluent with a range of mental strategies for addition and subtraction problems, such as commutativity for addition, building to 10, doubles, 10 facts and adding 10.
  - » modelling and representing simple additive situations using materials such as 10 frames, 20 frames and empty number lines.
- Recognise and represent multiplication as repeated addition, groups and arrays **(ACMNA031)**.
- Recognise and represent division as grouping into equal sets and solve simple problems using these representations **(ACMNA032)**.

Patterns and algebra

- Describe patterns with numbers and identify missing elements **(ACMNA035)**.
  - » investigating features of number patterns resulting from adding twos, fives or 10s.
- Solve problems by using number sentences for addition or subtraction **(ACMNA036)**.
  - » representing a word problem as a number sentence.
  - » writing a word problem to represent a number sentence.

Year 3 Content Descriptions Number and Algebra

Number and place value

- Investigate the conditions required for a number to be odd or even and identify odd and even numbers **(ACMNA051)**.
- Recognise, model, represent and order numbers to at least 10 000 **(ACMNA052)**.
- Apply place value to partition, rearrange and regroup numbers to at least 10 000 to assist calculations and solve problems **(ACMNA053)**.
- Recognise and explain the connection between addition and subtraction **(ACMNA054)**.
  - » demonstrating the connection between addition and subtraction using partitioning or by writing equivalent number sentences.
- Recall addition facts for single-digit numbers and related subtraction facts to develop increasingly efficient mental strategies for computation (**ACMNA055)**.
  - » recognising that certain single-digit number combinations always result in the same answer for addition and subtraction, and using this knowledge for addition and subtraction of larger numbers.
  - » combining knowledge of addition and subtraction facts and partitioning to aid computation (for example, $57 + 19 = 57 + 20 - 1$).
- Recall multiplication facts of two, three, five and ten and related division facts **(ACMNA056)**.
- Represent and solve problems involving multiplication using efficient mental and written strategies and appropriate digital technologies **(ACMNA057)**.

Patterns and algebra

- Describe, continue, and create number patterns resulting from performing addition or subtraction **(ACMNA060)**.

Bond® Blocks IMPLEMENTATION

Curriculum Changes from Version 8 to 9

The order in which the chapters of activities are completed is different for tier one Whole Class Implementation are different for versions 8 and 9 of the curriculum. Some chapters of activities have been moved into a different order to meet Version 9 of the Australian Curriculum. The following information highlights these changes.

Addition and Subtraction Basic Facts

Version 9 has moved the Year 3 content descriptor (ACMNA055) of recalling facts to 20 to Year 2.

> **Year 2:** Recall and demonstrate proficiency with addition facts to 20; extend and apply facts to develop related subtraction facts (AC9M2A02).

Version 9 has specified focusing on Bonds of 10 in Year 1.

> **Year 1:** Add and subtract numbers within 20, using physical and virtual materials, part-part-whole knowledge to 10 and a variety of calculation strategies (AC9M1N04).

Multiplication of 2 Related Division Facts

Version 9 has moved the Year 3 content descriptor (ACMNA056) about multiplication facts of two and related division facts to Year 2.

> **Year 2:** Recall and demonstrate proficiency with multiplication facts for twos; extend and apply facts to develop the related division facts using doubling and halving (AC9M2A03).

Number Strand

Version 9 has separated the strands Number and Algebra. The Number strand emphasises the same concepts and strategies as Bond Blocks. For example,

> **Year 2:** Add and subtract one- and two-digit numbers, representing problems using number sentences and solve using part-part-whole reasoning and a variety of calculation strategies (AC9M2N04)

The elaborations for this include "representing addition and subtraction problems using a bar model and writing a number sentence, explaining how each number in the sentence is connected to the situation". They also list strategies such as "doubles, near doubles, part-part-whole knowledge to 10, bridging tens and partitioning". All of these are components of the Bond Blocks Core Kit.

Algebra Strand

The Algebra strand in Year 3 requires students to find unknowns.

> **Year 3:** Recognise and explain the connection between addition and subtraction as inverse operations, apply to partition numbers and find unknown values in number sentences (AC9M3A01).

This algebra understanding is foundational to Bond Blocks.

The first elaboration for this content descriptor is:

> "This may involve students partitioning numbers using materials, part-part-whole diagrams or bar models, and recording addition and subtraction facts for each representation, explaining how each fact is connected to the materials, diagrams or models; for example, 16 + 8 = 24, 24 – 8 = 16, 8 = 24 – 16 ."

Such connections are explicitly made throughout the Core Kit.

One example of finding unknowns given in the elaborations includes:

☐ - $375 = $158.

Bond Blocks systematically builds algebra understandings from Year 1, through part-part-whole. This lays a firm foundation for students to be able to achieve this Year 3 content descriptor.

Another example of finding unknowns from the same content descriptor is:

☐ = 63 – 27

Note the unknown part is on the left side of equal sign. Bond Blocks Teacher Notes and 'a little harder' activities prepare students for equations in atypical order such as this example from the elaborations.

Bond® Blocks IMPLEMENTATION

Tier One Whole Class Implementation Planner v9

Year 1 v9

Term 1 8 weeks	Exploratory Play	Test
	Bonds of 5	Activities 6 to 11
Term 2 8 weeks	Bonds of 5	Activities 12 to 15
	Doubling and Halving to 10	Activities 16 to 18
Term 3 8 weeks	Doubling and Halving to 10	Activities 19 to 20
	Five Plus Bonds	Activities 21 to 25
Term 4 8 weeks	Bonds of 10	Activities 26 to 33

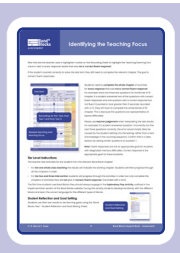
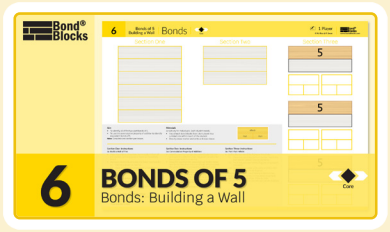
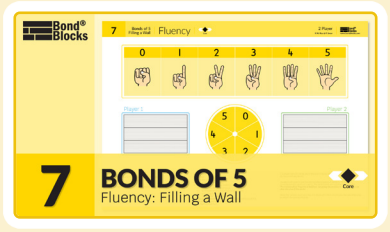
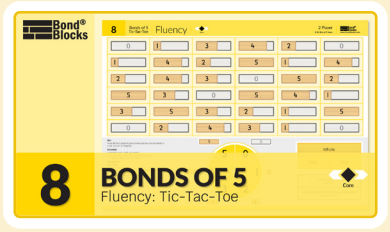
Year 2 v9

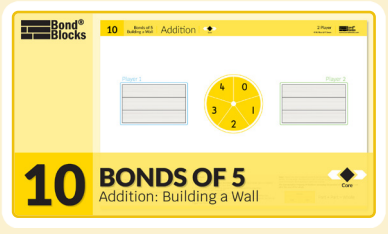
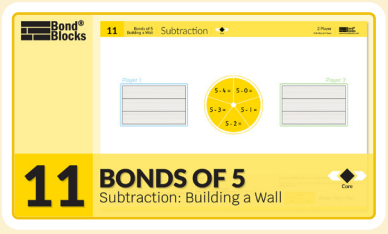
Term 1 9 weeks	Ten Plus Bonds (Bonds to 20)	Activities 41 to 49
Term 2 8 weeks	Bonds of 6, 7, 8, 9	Activities 34 to 40
Term 3 8 weeks	Doubling and Halving to 20	Activities 57 to 63
Term 4 6 weeks	Ten Plus Bonds (Bridging Ten Addition)	Activities 50 to 52

Year 3 v9

Term 1 8 weeks	Ten Plus Bonds (Bridging Ten Subtraction)	Activities 53 to 56
Term 2 8 weeks	Bonds of 11 to 20	Activities 64 to 69
Term 3 4 weeks	Bonds of 11 to 20	Activities 70 to 71

Year 1 - Term 1 (v9)

Week	Activity Number
20 min 1 tick ●●●	**Exploratory Play** • If this is the first-time students used Bond Blocks they will need at least three sessions of Exploratory Play. • Exploratory Play Activity Notes are in the Implementation section of the website.
2 tick ●	   **Bond Blocks Test and Student Goal Setting**
40 min 3 tick ●●●	 **6) Bonds:** Building a Wall • This board will take three 40 minutes sessions. • **Session 1:** Section 1. • **Session 2:** Section 2. • **Session 3:** Section 3.
8 min 4 tick ●●●	 **7) Fluency:** Filling a Wall
8 min 5 tick ●●●	 **8) Fluency:** Tic-Tac-Toe

Week	Activity Number
8 min 6 tick ●●●	 **9) Fluency:** Racing Cars
8 min 7 tick ●●●	 **10) Addition:** Building a Wall
8 min 8 tick ●●●	 **11) Subtraction:** Building a Wall

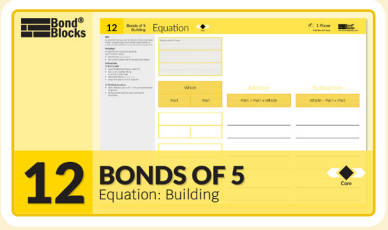
Year 1 - Term 2 (v9)

Week	Activity Number

8 min

1

tick



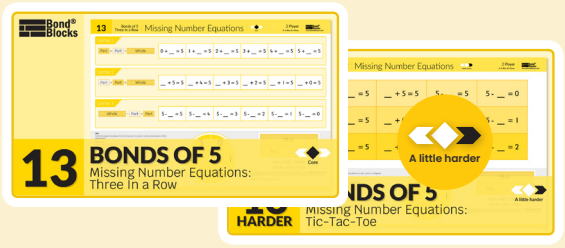
12) Equation: Building

- **Session 1:** Build the wall and fill in the part-part-whole diagrams.
- **Session 2:** Write equations.
- **Session 3:** Write equations again.
- Students who have difficulty will find it easier to write all the addition equations in Session 2 and the subtraction equations in Session 3.

8 min

2

tick



13) Missing Number Equations: Three In a Row **(2023 Version)**

- **Session 1:** Play Game 1.
- **Session 2:** Play Game 2.
- **Session 3:** Play Game 3.
- **Extension:** Activity Board 13 (a little harder) Missing Number Equations: Tic-Tac-Toe.

(2022 Version) Refer to the activity's web page.

40 min

3

tick

14) Representing Addition / Representing Subtraction: Thinkboard

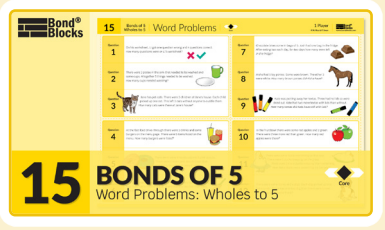
- This is a Core Lesson. It will take three, forty minute lessons.
- **Lesson 1:** Complete the Addition Thinkboard.
- **Lesson 2:** Complete the Subtraction Thinkboard.
- **Lesson 3:** Complete a Thinkboard of your choice or the 'a little harder activity'. See the activity web page.

Week	Activity Number

40 min

4

tick



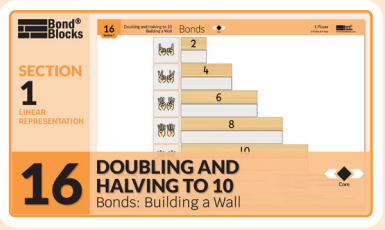
15) Word Problems: Wholes to 5

- This is a Core Lesson. It will take three, forty minute lessons.
- Please read the instructions on the activity web page about cutting up the cards and differentiation activities.

20 min

5

tick



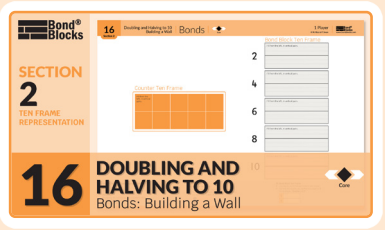
16.1) Bonds: Building a Wall **(Section 1)**

- This board will take 20 minutes to complete.
- Complete it three times this week.

20 min

6

tick



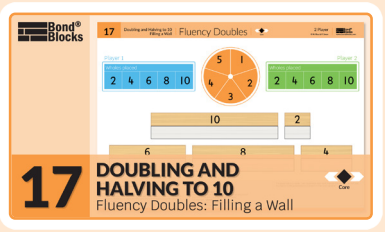
16.2) Bonds: Building a Wall **(Section 2)**

- This board will take 20 minutes to complete.
- Complete it three times this week.

8 min

7

tick

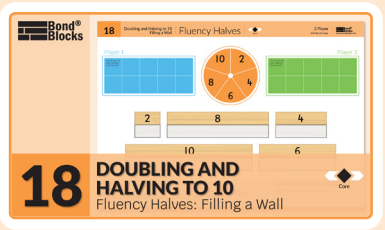


17) Fluency Doubles: Filling a Wall

8 min

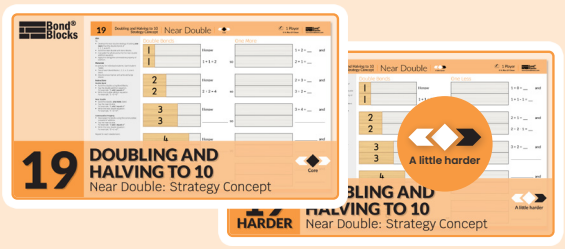
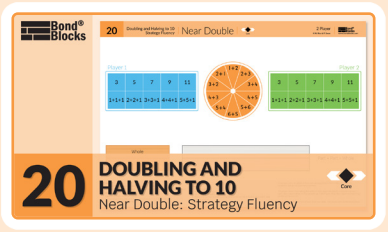
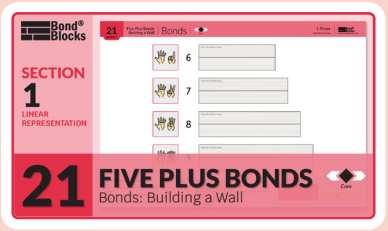
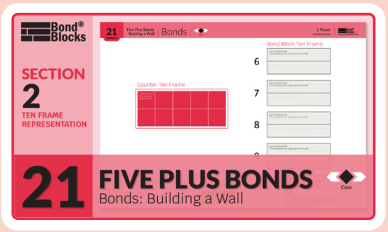
8

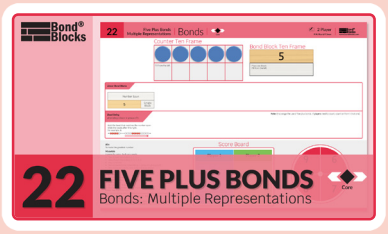
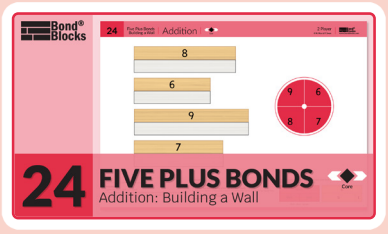
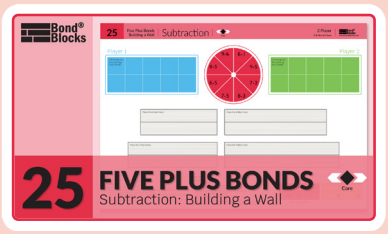
tick



18) Fluency Halves: Filling a Wall

Year 1 - Term 3 (v9)

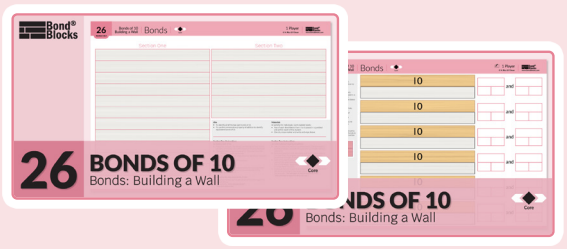
Week	Activity Number
20 min 1 tick ●●●	 • **Session 1:** Core activity board. (20 min) • **Session 2:** Core activity board. (20 min) • **Session 3:** Activity Board 19 (a little harder) Near Double: Strategy Concept. (20 min)
20 min 2 tick ●●●	 **20) Near Double:** Strategy Fluency • This board will take 20 minutes to complete. • Complete it three times this week.
20 min 3 tick ●●●	 **21.1) Bonds:** Building a Wall **(Section 1)** • This board will take 20 minutes to complete. • Complete it three times this week.
20 min 4 tick ●●●	 **21.2) Bonds:** Building a Wall **(Section 2)** • This board will take 20 minutes to complete. • Complete it three times this week.

Week	Activity Number
8 min 5 tick ●●●	 **22) Bonds:** Multiple Representations
8 min 6 tick ●●●	 **23) Fluency:** Tic-Tac-Toe
8 min 7 tick ●●●	 **24) Addition:** Building a Wall
8 min 8 tick ●●●	 **25) Subtraction:** Building a Wall

Year 1 - Term 4 (v9)

Week	Activity Number

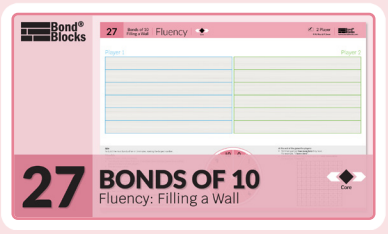
20 min · 1 tick



26.1 / 26.2) Bonds: Building a Wall

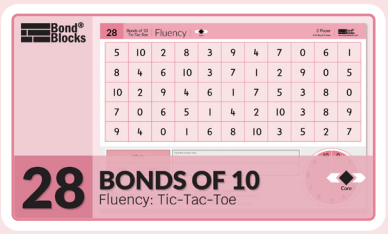
- This board will take three 20 minutes sessions.
- **Session 1:** Section 1.
- **Session 2:** Section 2.
- **Session 3:** Section 3.

8 min · 2 tick



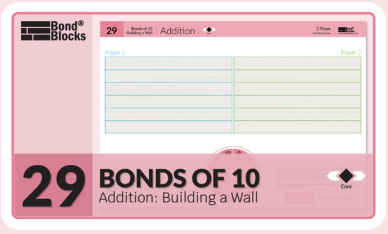
27) Fluency: Filling a Wall

8 min · 3 tick



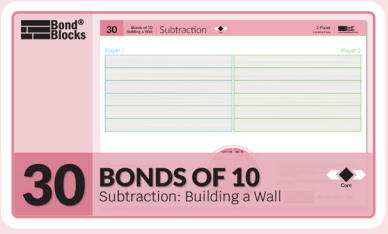
28) Fluency: Tic-Tac-Toe

8 min · 4 tick



29) Addition: Building a Wall

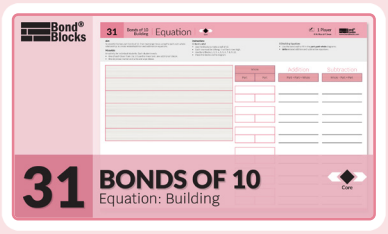
8 min · 5 tick



30) Subtraction: Building a Wall

Week	Activity Number

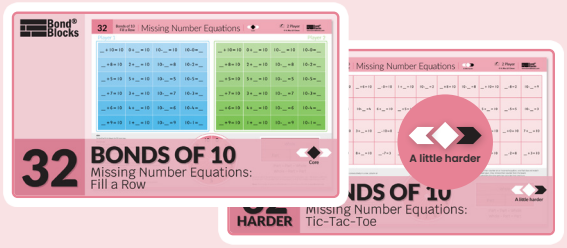
8 min · 6 tick



31) Equation: Building

- **Session 1:** Build the wall and fill in the part-part-whole diagrams.
- **Session 2:** Write equations.
- **Session 3:** Write equations again.
- Students who have difficulty will find it easier to write all the addition equations in Session 2 and the subtraction equations in Session 3.

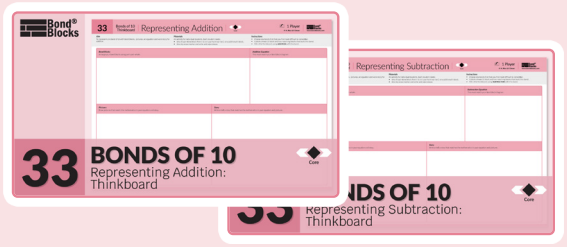
8 min · 7 tick



32) Missing Number Equations: Fill a Row

- **Extension:** Activity Board 32 (a little harder) Missing Number Equations: Tic-Tac-Toe.

40 min · 8 tick



33) Representing Addition / Representing Subtraction: Thinkboard

- This is a Core Lesson. It will take three, forty minute lessons.
- **Lesson 1:** Complete the Addition Thinkboard.
- **Lesson 2:** Complete the Subtraction Thinkboard.
- **Lesson 3:** Complete a Thinkboard of your choice or the 'a little harder activity'. See the activity web page.

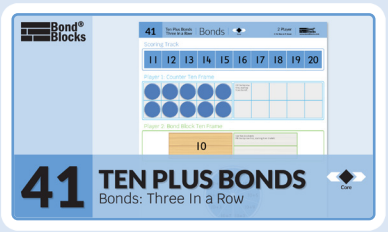
Year 2 - Term 1 (v9)

Chapter 7) Ten Plus Bonds:

Activities 41 to 44 are revision of Year 1 content. They should be quite easy which is helpful whilst establishing class Bond Block routines at the beginning of the year. These activities are prerequisite knowledge for Activities 45 to 48.

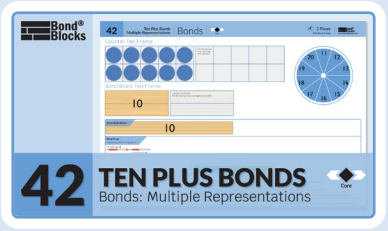
Week	Activity Number

8 min
1
tick



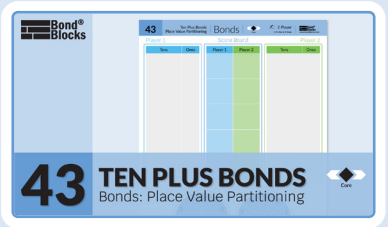
41) Bonds: Three In a Row

8 min
2
tick



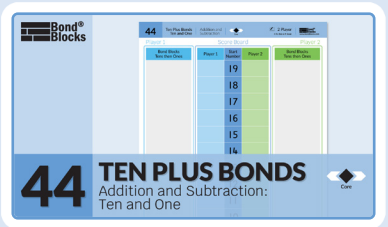
42) Bonds: Multiple Representations

8 min
3
tick



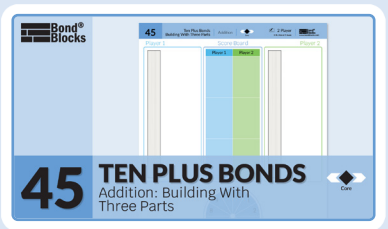
43) Bonds: Place Value Partitioning

8 min
4
tick



44) Addition and Subtraction: Ten and One

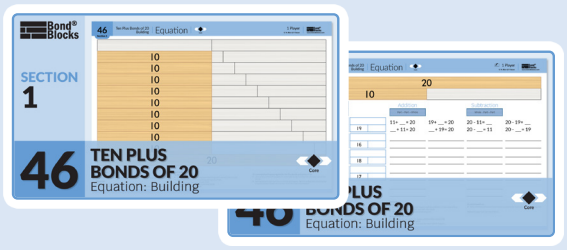
8 min
5
tick



45) Addition: Building With Three Parts

Week	Activity Number

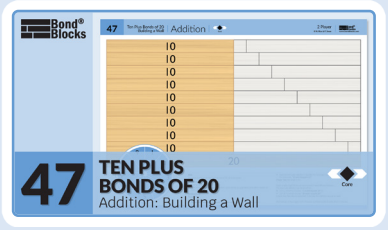
40 min
6
tick



46.1 / 46.2) Equation: Building

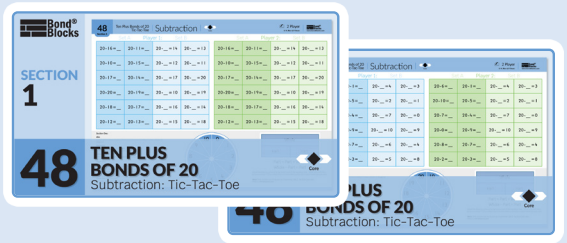
- This is a Core Lesson. It will take three, forty minute lessons.
- **Lesson 1:** Section One board. The video is bookmarked. Practise after each instruction.
- **Lesson 2:** Section Two board.
- **Lesson 3:** Some students will still be completing the Section Two board. Extend early finishers using the 'a little harder' activities. See the activity web page.

8 min
7
tick



47) Addition: Building a Wall

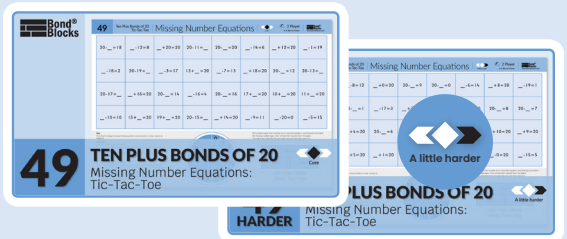
8 min
8
tick



48.1 / 48.2) Subtraction: Tic-Tac-Toe

- **Session 1:** Section One Game A (the unknown part is in the typical answer position).
- **Session 2:** Section One Game B (the unknown part is not in the typical answer position).
- **Session 3:** Section Two. Students can choose either Game A (with the unknown in the typical answer position) or Game B (where the unknown part is in the other position).

8 min
9
tick



49) Missing Number Equations: Tic-Tac-Toe

- **Session 1:** Core activity board.
- **Session 2:** Core activity board.
- **Session 3:** Activity Board 49 (a little harder) Missing Number Equations: Tic-Tac-Toe

Year 2 - Term 2 (v9)

Chapter 6) Bonds of 6, 7, 8, 9

Students have learnt several Bonds of 6, 7, 8 and 9 in the previous chapters 'Doubling and Halving to 10' and 'Five Plus Bonds'.

The most difficult bonds left to learn in this Chapter are:

- 6 as 2 and 4
- 7 as 3 and 4
- 8 as 2 and 6
- 9 as 2 and 7
- 9 as 3 and 6

For this reason students do not practice every bond, every activity. They are spread so as students have more practice with the more difficult bonds.

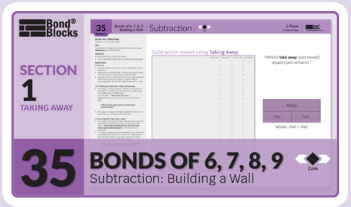
Week	Activity Number

40 min · 1 · tick ●●●

34) Bonds: Building a Wall

- This is a Core Lesson. Complete all three sections in a forty minute maths lesson.
- **Lesson 1:** Complete this board for Bonds of 6.
- **Lesson 2:** Complete this board for Bonds of 7.
- **Lesson 3:** Complete this board for Bonds of 8.
- **Early Finishers:** Complete this board for Bonds of 9.

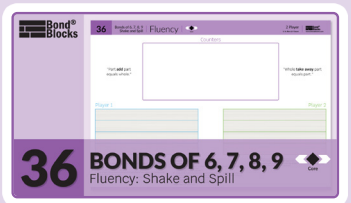
20 min · 2 · tick ●●●



35.1) Subtraction: Building a Wall (Section 1)

- This board will take 20 minutes to complete.
- **Session 1:** Complete this board for Bonds of 6.
- **Session 2:** Complete this board for Bonds of 7.
- **Session 3:** Complete this board for Bonds of 7 again.

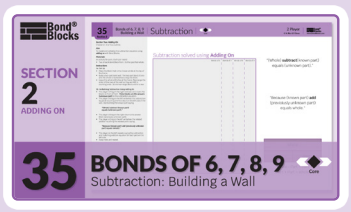
8 min · 3 · tick ●●●



36) Fluency: Shake and Spill

- This board has been placed here on purpose to break up Activity 35 Subtraction Section One and Two.

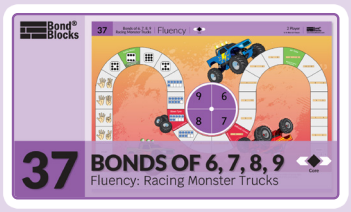
8 min · 4 · tick ●●●



35.2) Subtraction: Building a Wall (Section 2)

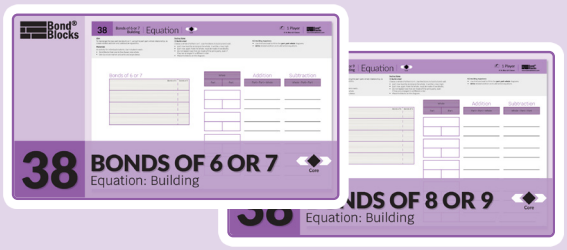
- This board will take 20 minutes to complete.
- **Session 1:** Complete this board for Bonds of 8.
- **Session 2:** Complete this board for Bonds of 9.
- **Session 3:** Complete this board for Bonds of 9 again.

8 min · 5 · tick ●●●



37) Fluency: Racing Monster Trucks

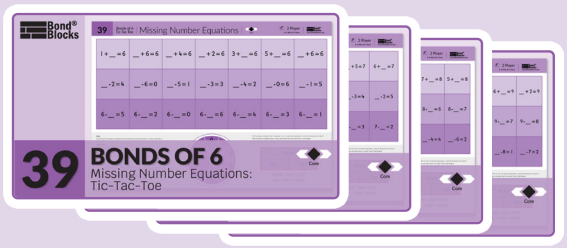
20 min · 6 · tick ●●●



38) Equation: Building

- This board will take 20 minutes to complete.
- **Session 1:** Complete this board for Bonds of 7.
- **Session 2:** Complete this board for Bonds of 8.
- **Session 3:** Complete this board for Bonds of 9.
- The Bonds of 6 board is the easiest. Some students may benefit from completing this board each session.
- Students who require extension can complete the 'a little harder' activity – atypical arrangement.

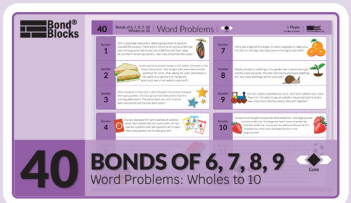
8 min · 7 · tick ●●●



39) Missing Number Equations: Tic-Tac-Toe

- **Session 1:** Complete this board for Bonds of 7.
- **Session 2:** Complete this board for Bonds of 8.
- **Session 3:** Complete this board for Bonds of 9.
- The Bonds of 6 board is the easiest. Some students may benefit from completing this board each session.

40 min · 8 · tick ●●●



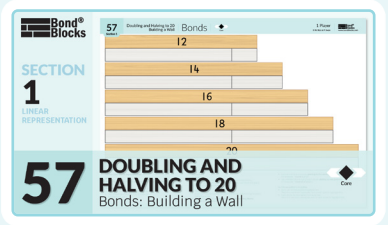
40) Word Problems: Wholes to 10

- This is a Core Lesson. It will take three, forty minute lessons. Please read activity web page instructions.

Year 2 - Term 3 (v9)

Week	Activity Number

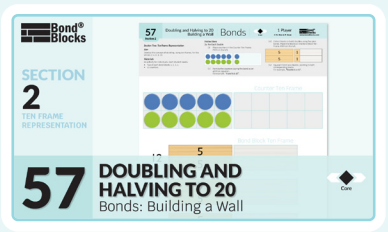
20 min · 1 · tick



57.1) Bonds: Building a Wall **(Section 1)**

- This board will take 20 minutes to complete.
- Complete it three times this week.

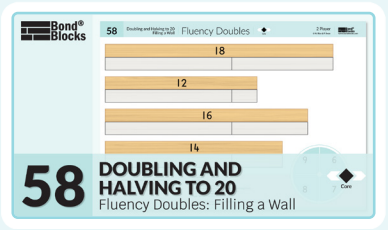
20 min · 2 · tick



57.2) Bonds: Building a Wall **(Section 2)**

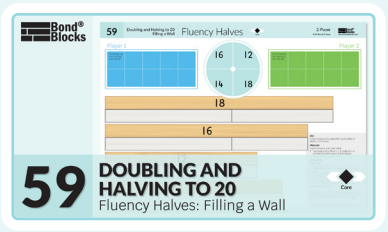
- This board will take 20 minutes to complete.
- Complete it three times this week.

8 min · 3 · tick



58) Fluency Doubles: Filling a Wall

8 min · 4 · tick



58) Fluency Halves: Filling a Wall

8 min · 5 · tick

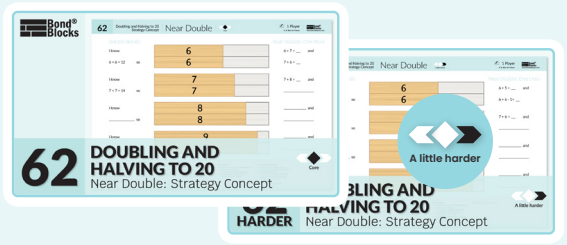
60) Fluency Doubles: Racing Kayaks

Week	Activity Number

8 min · 6 · tick

61) Fluency Halves: Racing Snowboards

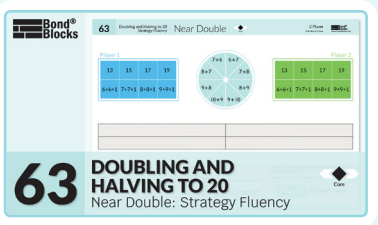
20 min · 7 · tick



62) Near Double: Strategy Concept

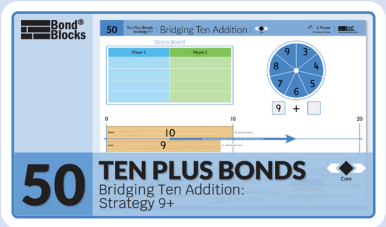
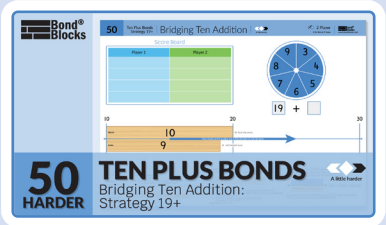
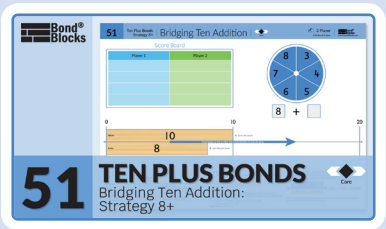
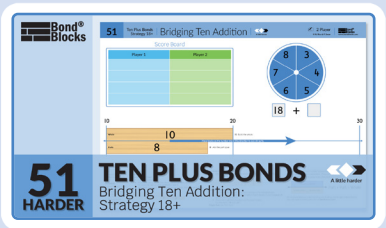
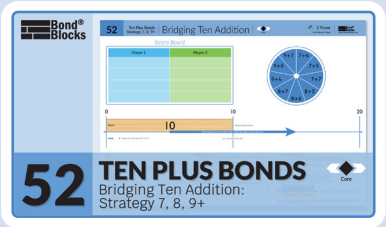
- **Session 1:** Core activity board. (20 min)
- **Session 2:** Core activity board. (20 min)
- **Session 3:** Activity Board 19 (a little harder) Near Double: Strategy Concept. (20 min)

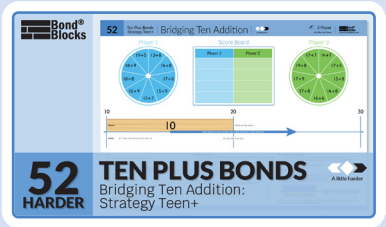
8 min · 8 · tick



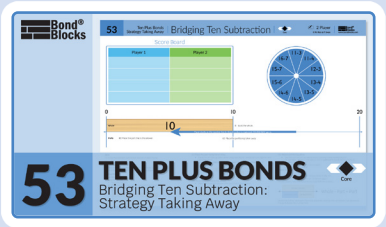
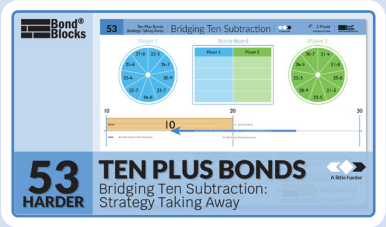
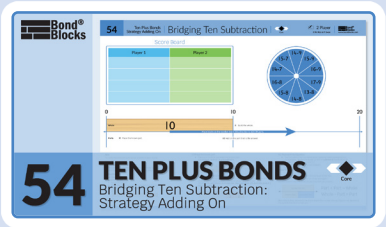
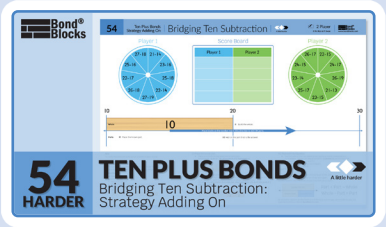
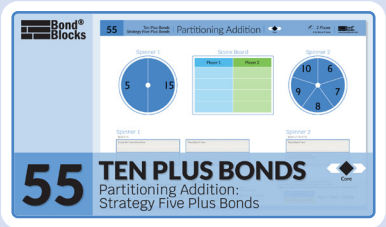
63) Near Double: Strategy Fluency

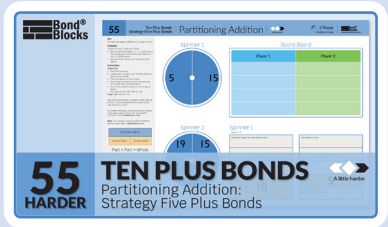
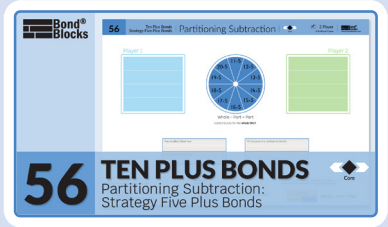
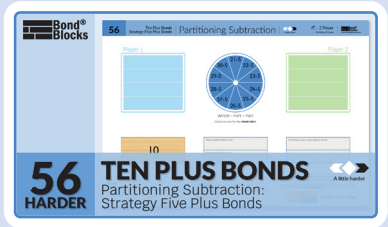
Year 2 - Term 4 (v9)

Week	Activity Number
8 min 1 tick	 **50) Bridging Ten Addition:** Strategy 9+
8 min 2 tick	 **50) Bridging Ten Addition:** Strategy 19+ **(a little harder)**
8 min 3 tick	 **51) Bridging Ten Addition:** Strategy 8+
8 min 4 tick	 **51) Bridging Ten Addition:** Strategy 18+ **(a little harder)**
8 min 5 tick	 **52) Bridging Ten Addition:** Strategy 7, 8, 9+

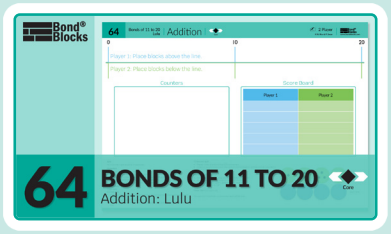
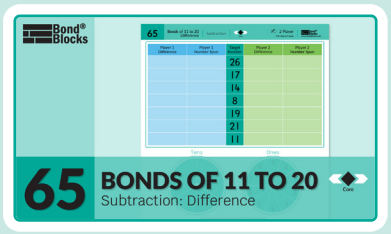
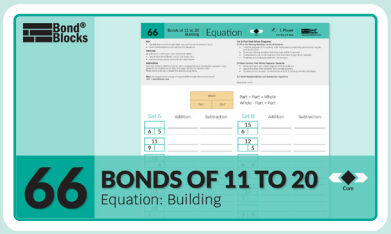
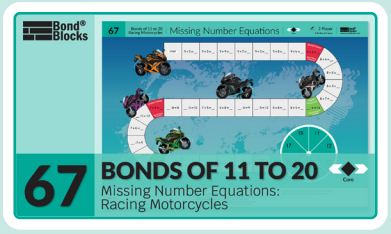
Week	Activity Number
8 min 6 tick	 **52) Bridging Ten Addition:** Strategy Teen+ **(a little harder)**

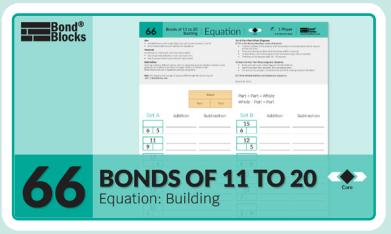
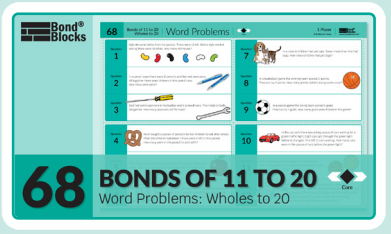
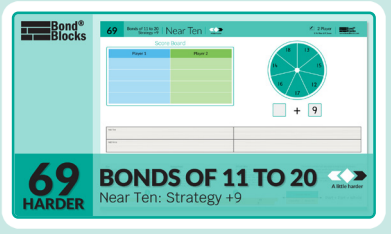
Year 3 - Term 1 (v9)

Week	Activity Number
8 min 1 tick	 **53) Bridging Ten Subtraction:** Strategy Taking Away
8 min 2 tick	 **53) Bridging Ten Subtraction:** Strategy Taking Away **(a little harder)**
8 min 3 tick	 **54) Bridging Ten Subtraction:** Strategy Adding On
8 min 4 tick	 **54) Bridging Ten Subtraction:** Strategy Adding On **(a little harder)**
8 min 5 tick	 **55) Partitioning Addition:** Strategy Five Plus Bonds

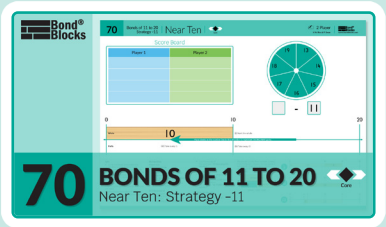
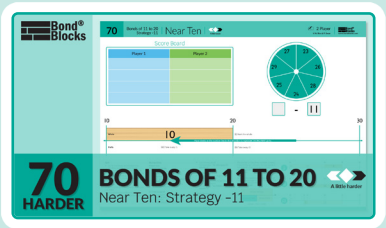
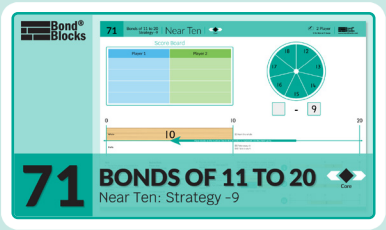
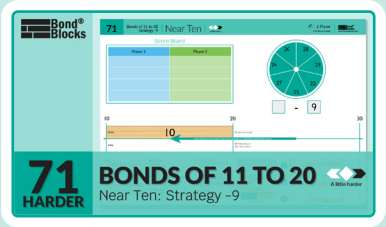
Week	Activity Number
8 min 6 tick	 **55) Partitioning Addition:** Strategy Five Plus Bonds **(a little harder)**
8 min 7 tick	 **56) Partitioning Subtraction:** Strategy Five Plus Bonds
8 min 8 tick	 **56) Partitioning Subtraction:** Strategy Five Plus Bonds **(a little harder)**

Year 3 - Term 2 (v9)

Week	Activity Number
8 min 1 tick	 **64) Addition:** Lulu
8 min 2 tick	 **65) Subtraction:** Difference
8 min 3 tick	 **66) Equation:** Building **(Set A)** • **Session 1:** Fill in the part-part-whole diagrams. • **Session 2:** Write equations. • **Session 3:** Finish writing equations. • Students who have difficulty will find it easier to write all the addition equations in Session 2 and the subtraction equations in Session 3. • Students who require extension can complete the 'a little harder' activity – atypical arrangement. See the activity web page.
8 min 4 tick	 **67) Missing Number Equations:** Racing Motorcycles

Week	Activity Number
8 min 5 tick	 **66) Equation:** Building **(Set B)** • **Session 1:** Fill in the part-part-whole diagrams. • **Session 2:** Write equations. • **Session 3:** Finish writing equations. • Students who have difficulty will find it easier to write all the addition equations in Session 2 and the subtraction equations in Session 3. • Students who require extension can complete the 'a little harder' activity – atypical arrangement. See the activity web page.
40 min 6 tick	 **68) Word Problems:** Wholes to 20 • This is a Core Lesson. It will take three, forty minute lessons. • Please read the instructions on the activity web page about cutting up the cards and differentiation activities.
8 min 7 tick	 **66) Near Ten:** Strategy +9
8 min 8 tick	 **66) Near Ten:** Strategy +9 **(a little harder)**

Year 3 - Term 3 (v9)

Week	Activity Number
8 min 1 tick	 **70) Near Ten:** Strategy -11
8 min 2 tick	 **70) Near Double:** Strategy -11 **(a little harder)**
8 min 3 tick	 **71) Near Ten:** Strategy -9
8 min 4 tick	 **71) Near Ten:** Strategy -9 **(a little harder)**

Australian Curriculum Links (Version 9)

Foundation

	Activity Number	Curriculum Links
Chapter 1) Counting	**1) Forwards 1 to 10:** Building Steps	**Foundation Number** • Name, represent and order numbers including zero to at least 20, using physical and virtual materials and numerals **(AC9MFN01)**. • Recognise and name the number of objects within a collection up to 5 using subitising **(AC9MFN02)**. • Quantify and compare collections to at least 20 using counting and explain or demonstrate reasoning **(AC9MFN03)**. • Partition and combine collections up to 10 using part-part-whole relationships and subitising to recognise and name the parts **(AC9MFN04)**. **Foundation Algebra** • Recognise, copy and continue repeating patterns represented in different ways **(AC9MFA01)**.
	1) Forwards 10 to 20: Building Steps *(a little harder)*	
	2) Number After: Greater Number	
	2) Number After: Greater Number *(a little harder)*	
	3) Backwards 10 to 1: Building Steps	
	3) Backwards 20 to 10: Building Steps *(a little harder)*	
	4) Number Before: Lesser Number	
	4) Number Before: Lesser Number *(a little harder)*	
	5) Identifying Numbers 1 to 5: Building Steps *(a little easier)*	
	5) Identifying Numbers 6 to 10: Building Steps	

Year 1

	Activity Number	Curriculum Links
Chapter 2) Bonds of 5	**6) Bonds:** Building a Wall	**Foundation Number** • Represent practical situations involving addition, subtraction and quantification with physical and virtual materials and use counting or subitising strategies **(AC9MFN05)**. **Year One Number** • Partition one- and two-digit numbers in different ways using physical and virtual materials, including partitioning two-digit numbers into tens and ones **(AC9M1N02)**. • Add and subtract numbers within 20, using physical and virtual materials, part-part-whole knowledge to 10 and a variety of calculation strategies **(AC9M1N04)**. • Use mathematical modelling to solve practical problems involving additive situations, including simple money transactions; represent the situations with diagrams, physical and virtual materials, and use calculation strategies to solve the problem **(AC9M1N05)**. **Year One Algebra** • Recognise, continue and create repeating patterns with numbers, symbols, shapes and objects, identifying the repeating unit **(AC9M1A02)**.
	7) Fluency: Filling a Wall	
	8) Fluency: Tic-Tac-Toe	
	9) Fluency: Racing Cars	
	10) Addition: Building a Wall	
	11) Subtraction: Building a Wall	
	12) Equation: Building *(a little easier)*	
	12) Equation: Building	
	13) Missing Number Equations: Fill a Row *(a little easier)*	
	13) Missing Number Equations: Three In a Row	
	13) Missing Number Equations: Tic-Tac-Toe *(a little harder)*	
	14) Representing Addition: Thinkboard	
	14) Representing Subtraction: Thinkboard	
	15) Word Problems: Whole to 5	

Year 1

	Activity Number	Curriculum Links
Chapter 3) Doubling and Halving to 10	**16.1 / 16.2) Bonds:** Building a Wall	**Year One Number** • Partition one- and two-digit numbers in different ways using physical and virtual materials, including partitioning two-digit numbers into tens and ones **(AC9M1N02)**. • Add and subtract numbers within 20, using physical and virtual materials, part-part-whole knowledge to 10 and a variety of calculation strategies **(AC9M1N04)**. • Use mathematical modelling to solve practical problems involving additive situations, including simple money transactions; represent the situations with diagrams, physical and virtual materials, and use calculation strategies to solve the problem **(AC9M1N05)**. • Use mathematical modelling to solve practical problems involving equal sharing and grouping; represent the situations with diagrams, physical and virtual materials, and use calculation strategies to solve the problem **(AC9M1N06)**.
	17) Fluency Doubles: Filling a Wall	
	18) Fluency Halves: Filling a Wall	
	19) Near Double: Strategy Concept	
	19) Near Double: Strategy Concept *(a little harder)*	
	20) Near Double: Strategy Fluency	

	Activity Number	Curriculum Links
Chapter 4) Five Plus Bonds	**21.1 / 21.2) Bonds:** Building a Wall	**Year One Number** • Partition one- and two-digit numbers in different ways using physical and virtual materials, including partitioning two-digit numbers into tens and ones **(AC9M1N02)**. • Add and subtract numbers within 20, using physical and virtual materials, part-part-whole knowledge to 10 and a variety of calculation strategies **(AC9M1N04)**. • Use mathematical modelling to solve practical problems involving additive situations, including simple money transactions; represent the situations with diagrams, physical and virtual materials, and use calculation strategies to solve the problem **(AC9M1N05)**. **Year One Algebra** • Recognise, continue and create repeating patterns with numbers, symbols, shapes and objects, identifying the repeating unit **(AC9M1A02)**.
	22) Bonds: Multiple Representations	
	23) Fluency: Tic-Tac-Toe	
	24) Addition: Building a Wall	
	25) Subtraction: Building a Wall	

Year 1

	Activity Number	Curriculum Links
Chapter 5) Bonds of 10	**26.1 / 26.2) Bonds:** Building a Wall	**Year One Number** • Partition one- and two-digit numbers in different ways using physical and virtual materials, including partitioning two-digit numbers into tens and ones **(AC9M1N02)**. • Add and subtract numbers within 20, using physical and virtual materials, part-part-whole knowledge to 10 and a variety of calculation strategies **(AC9M1N04)**. • Use mathematical modelling to solve practical problems involving additive situations, including simple money transactions; represent the situations with diagrams, physical and virtual materials, and use calculation strategies to solve the problem **(AC9M1N05)**. **Year One Algebra** • Recognise, continue and create repeating patterns with numbers, symbols, shapes and objects, identifying the repeating unit **(AC9M1A02)**.
	27) Fluency: Filling a Wall	
	28) Fluency: Tic-Tac-Toe	
	29) Addition: Building a Wall	
	30) Subtraction: Building a Wall	
	31) Equation: Building	
	31) Equation: Building *(a little easier)*	
	32) Missing Number Equations: Fill a Row	
	32) Missing Number Equations: Tic-Tac-Toe *(a little harder)*	
	33) Representing Addition: Thinkboard	
	33) Representing Subtraction: Thinkboard	

Year 2

	Activity Number	Curriculum Links
Chapter 7) Ten Plus Bonds	**41) Bonds:** Three In a Row	**Year One Number** • Partition one- and two-digit numbers in different ways using physical and virtual materials, including partitioning two-digit numbers into tens and ones **(AC9M1N02)**. **Year Two Number** • Add and subtract one- and two-digit numbers, representing problems using number sentences and solve using part-part-whole reasoning and a variety of calculation strategies **(AC9M2N04)**. • Use mathematical modelling to solve practical problems involving additive and multiplicative situations, including money transactions; represent situations and choose calculation strategies; interpret and communicate solutions in terms of the situation **(AC9M2N06)**. **Year Two Algebra** • Recognise, describe and create additive patterns that increase or decrease by a constant amount, using numbers, shapes and objects, and identify missing elements in the pattern **(AC9M2A01).** • Recall and demonstrate proficiency with addition facts to 20; extend and apply facts to develop related subtraction facts **(AC9M2A02)**.
	42) Bonds: Multiple Representations	
	43) Bonds: Place Value Partitioning	
	44) Addition and Subtraction: Ten and One	
	45) Addition: Building With Three Parts	
	46.1 / 46.2) Equation: Building	
	47) Addition: Building a Wall	
	48.1 / 48.2) Subtraction: Tic-Tac-Toe	
	49) Missing Number Equations: Tic-Tac-Toe	
	49) Missing Number Equations: Tic-Tac-Toe *(a little harder)*	

Year 2

	Activity Number	Curriculum Links
Chapter 6) Bonds of 6, 7, 8, 9	34) Bonds of 6 or 7 - **Bonds:** Building a Wall	**Year Two Number** • Add and subtract one- and two-digit numbers, representing problems using number sentences and solve using part-part-whole reasoning and a variety of calculation strategies **(AC9M2N04)**. • Use mathematical modelling to solve practical problems involving additive and multiplicative situations, including money transactions; represent situations and choose calculation strategies; interpret and communicate solutions in terms of the situation **(AC9M2N06)**. **Year Two Algebra** • Recognise, describe and create additive patterns that increase or decrease by a constant amount, using numbers, shapes and objects, and identify missing elements in the pattern **(AC9M2A01).** • Recall and demonstrate proficiency with addition facts to 20; extend and apply facts to develop related subtraction facts **(AC9M2A02)**.
	34) Bonds of 8 or 9 - **Bonds:** Building a Wall	
	35.1 / 35.2) **Subtraction:** Building a Wall	
	36) **Fluency:** Shake and Spill	
	37) **Fluency:** Racing Monster Trucks	
	38) Bonds of 6 or 7 - **Equation:** Building	
	38) Bonds of 8 or 9 - **Equation:** Building	
	39) Bonds of 6 - **Missing Number Equations:** Tic-Tac-Toe	
	39) Bonds of 7 - **Missing Number Equations:** Tic-Tac-Toe	
	39) Bonds of 8 - **Missing Number Equations:** Tic-Tac-Toe	
	39) Bonds of 9 - **Missing Number Equations:** Tic-Tac-Toe	
	40) **Word Problems:** Wholes to 10	

Year 2

	Activity Number	Curriculum Links
Chapter 8) Doubling and Halving to 20	**57.1 / 57.2) Bonds:** Building a Wall	**Year Two Number** • Add and subtract one- and two-digit numbers, representing problems using number sentences and solve using part-part-whole reasoning and a variety of calculation strategies **(AC9M2N04)**. • Use mathematical modelling to solve practical problems involving additive and multiplicative situations, including money transactions; represent situations and choose calculation strategies; interpret and communicate solutions in terms of the situation **(AC9M2N06)**. • Recognise and describe one-half as one of 2 equal parts of a whole and connect halves, quarters and eighths through repeated halving **(AC9M2N03)**. **Year Two Algebra** • Recall and demonstrate proficiency with addition facts to 20; extend and apply facts to develop related subtraction facts **(AC9M2A02)**.
	58) Fluency Doubles: Filling a Wall	
	59) Fluency Halves: Filling a Wall	
	60) Fluency Doubles: Racing Kayaks	
	61) Fluency Halves: Racing Snowboards	
	62) Near Double: Strategy Concept	
	62) Near Double: Strategy Concept *(a little harder)*	
	63) Near Double: Strategy Fluency	

Year 2 and 3

	Activity Number	Curriculum Links
Chapter 7) Ten Plus Bonds	**50) Bridging Ten Addition:** Strategy 9+	**Year Two Number** • Add and subtract one- and two-digit numbers, representing problems using number sentences and solve using part-part-whole reasoning and a variety of calculation strategies **(AC9M2N04)**. • Use mathematical modelling to solve practical problems involving additive and multiplicative situations, including money transactions; represent situations and choose calculation strategies; interpret and communicate solutions in terms of the situation **(AC9M2N06)**. **Year Two Algebra** • Recognise, describe and create additive patterns that increase or decrease by a constant amount, using numbers, shapes and objects, and identify missing elements in the pattern **(AC9M2A01).** • Recall and demonstrate proficiency with addition facts to 20; extend and apply facts to develop related subtraction facts **(AC9M2A02)**. **Year Three Number** • Add and subtract two- and three-digit numbers using place value to partition, rearrange and regroup numbers to assist in calculations without a calculator **(AC9M3N03)**. • Use mathematical modelling to solve practical problems involving additive and multiplicative situations including financial contexts; formulate problems using number sentences and choose calculation strategies, using digital tools where appropriate; interpret and communicate solutions in terms of the situation **(AC9M3N06)**. **Year Three Algebra** • Recognise and explain the connection between addition and subtraction as inverse operations, apply to partition numbers and find unknown values in number sentences **(AC9M3A01)**. • Extend and apply knowledge of addition and subtraction facts to 20 to develop efficient mental strategies for computation with larger numbers without a calculator **(AC9M3A02)**.
	50) Bridging Ten Addition: Strategy 19+ *(a little harder)*	
	51) Bridging Ten Addition: Strategy 8+	
	51) Bridging Ten Addition: Strategy 18+ *(a little harder)*	
	52) Bridging Ten Addition: Strategy 7, 8, 9+	
	52) Bridging Ten Addition: Strategy Teen+ *(a little harder)*	
	53) Bridging Ten Subtraction: Strategy Taking Away	
	53) Bridging Ten Subtraction: Strategy Taking Away *(a little harder)*	
	54) Bridging Ten Subtraction: Strategy Adding On	
	54) Bridging Ten Subtraction: Strategy Adding On *(a little harder)*	
	55) Partitioning Addition: Strategy Five Plus Bonds	
	55) Partitioning Addition: Strategy Five Plus Bonds *(a little harder)*	
	56) Partitioning Subtraction: Strategy Five Plus Bonds	
	56) Partitioning Subtraction: Strategy Five Plus Bonds *(a little harder)*	

Year 3

	Activity Number	Curriculum Links
Chapter 9) Bonds of 11 to 20	**64) Addition:** Lulu	**Year Two Number** • Add and subtract one- and two-digit numbers, representing problems using number sentences and solve using part-part-whole reasoning and a variety of calculation strategies **(AC9M2N04)**. • Use mathematical modelling to solve practical problems involving additive and multiplicative situations, including money transactions; represent situations and choose calculation strategies; interpret and communicate solutions in terms of the situation **(AC9M2N06)**. **Year Two Algebra** • Recognise, describe and create additive patterns that increase or decrease by a constant amount, using numbers, shapes and objects, and identify missing elements in the pattern **(AC9M2A01).** • Recall and demonstrate proficiency with addition facts to 20; extend and apply facts to develop related subtraction facts **(AC9M2A02)**. **Year Three Number** • Add and subtract two- and three-digit numbers using place value to partition, rearrange and regroup numbers to assist in calculations without a calculator **(AC9M3N03)**. • Use mathematical modelling to solve practical problems involving additive and multiplicative situations including financial contexts; formulate problems using number sentences and choose calculation strategies, using digital tools where appropriate; interpret and communicate solutions in terms of the situation **(AC9M3N06)**. **Year Three Algebra** • Recognise and explain the connection between addition and subtraction as inverse operations, apply to partition numbers and find unknown values in number sentences **(AC9M3A01)**. • Extend and apply knowledge of addition and subtraction facts to 20 to develop efficient mental strategies for computation with larger numbers without a calculator **(AC9M3A02)**.
	65) Subtraction: Difference	
	66) Equation: Building	
	67) Missing Number Equations: Racing Motorcycles	
	68) Word Problems: Wholes to 20	
	69) Near Ten: Strategy +9	
	69) Near Ten: Strategy +9 *(a little harder)*	
	70) Near Ten: Strategy -11	
	70) Near Ten: Strategy -11 *(a little harder)*	
	71) Near Ten: Strategy -9	
	71) Near Ten: Strategy -9 *(a little harder)*	

Australian Curriculum (v9) Covered by Bond Blocks

Bond Blocks Addition and Subtraction to 20 covers the highlighted sections of the Australian Curriculum.
v9.australiancurriculum.edu.au

Foundation Year Content Descriptions Number and Algebra

Number

- Name, represent and order numbers including zero to at least 20, using physical and virtual materials and numerals **(AC9MFN01)**.
- Recognise and name the number of objects within a collection up to 5 using subitising **(AC9MFN02)**.
- Quantify and compare collections to at least 20 using counting and explain or demonstrate reasoning **(AC9MFN03)**.
- Partition and combine collections up to 10 using part-part-whole relationships and subitising to recognise and name the parts **(AC9MFN04)**.
- Represent practical situations involving addition, subtraction and quantification with physical and virtual materials and use counting or subitising strategies **(AC9MFN05)**.
- Represent practical situations involving equal sharing and grouping with physical and virtual materials and use counting or subitising strategies **(AC9MFN06)**.

Algebra

- Recognise, copy and continue repeating patterns represented in different ways **(AC9MFA01)**.

Year 1 Content Descriptions Number and Algebra

Number

- Recognise, represent and order numbers to at least 120 using physical and virtual materials, numerals, number lines and charts **(AC9M1N01)**.
- Partition one- and two-digit numbers in different ways using physical and virtual materials, including partitioning two-digit numbers into tens and ones **(AC9M1N02)**.
- Quantify sets of objects, to at least 120, by partitioning collections into equal groups using number knowledge and skip counting **(AC9M1N03)**.
- Add and subtract numbers within 20, using physical and virtual materials, part-part-whole knowledge to 10 and a variety of calculation strategies **(AC9M1N04)**.
- Use mathematical modelling to solve practical problems involving additive situations, including simple money transactions; represent the situations with diagrams, physical and virtual materials, and use calculation strategies to solve the problem **(AC9M1N05)**.
- Use mathematical modelling to solve practical problems involving equal sharing and grouping; represent the situations with diagrams, physical and virtual materials, and use calculation strategies to solve the problem **(AC9M1N06)**.

Algebra

- Recognise, continue and create pattern sequences, with numbers, symbols, shapes and objects, formed by skip counting, initially by twos, fives and tens **(AC9M1A01)**.
- Recognise, continue and create repeating patterns with numbers, symbols, shapes and objects, identifying the repeating unit **(AC9M1A02)**.

Year 2 Content Descriptions Number and Algebra

Number

- Recognise, represent and order numbers to at least 1000 using physical and virtual materials, numerals and number lines **(AC9M2N01)**.
- Partition, rearrange, regroup and rename two- and three-digit numbers using standard and non-standard groupings; recognise the role of a zero digit in place value notation **(AC9M2N02)**.
- Recognise and describe one-half as one of 2 equal parts of a whole and connect halves, quarters and eighths through repeated halving **(AC9M2N03)**.
- Add and subtract one- and two-digit numbers, representing problems using number sentences and solve using part-part-whole reasoning and a variety of calculation strategies **(AC9M2N04)**.
- Multiply and divide by one-digit numbers using repeated addition, equal grouping, arrays, and partitioning to support a variety of calculation strategies **(AC9M2N05)**.
- Use mathematical modelling to solve practical problems involving additive and multiplicative situations, including money transactions; represent situations and choose calculation strategies; interpret and communicate solutions in terms of the situation **(AC9M2N06)**.

Algebra

- Recognise, describe and create additive patterns that increase or decrease by a constant amount, using numbers, shapes and objects, and identify missing elements in the pattern **(AC9M2A01).**
- Recall and demonstrate proficiency with addition facts to 20; extend and apply facts to develop related subtraction facts **(AC9M2A02)**.
- Recall and demonstrate proficiency with multiplication facts for twos; extend and apply facts to develop the related division facts using doubling and halving **(AC9M2A03)**.

Year 3 Content Descriptions Number and Algebra

Number

- Recognise, represent and order natural numbers using naming and writing conventions for numerals beyond 10 000 **(AC9M3N01)**.
- Recognise and represent unit fractions including 1/2, 1/3, 1/4, 1/5 and 1/10 and their multiples in different ways; combine fractions with the same denominator to complete the whole **(AC9M3N02)**.
- Add and subtract two- and three-digit numbers using place value to partition, rearrange and regroup numbers to assist in calculations without a calculator **(AC9M3N03)**.
- Multiply and divide one- and two-digit numbers, representing problems using number sentences, diagrams and arrays, and using a variety of calculation strategies **(AC9M3N04)**.
- Estimate the quantity of objects in collections and make estimates when solving problems to determine the reasonableness of calculations **(AC9M3N05)**.
- Use mathematical modelling to solve practical problems involving additive and multiplicative situations including financial contexts; formulate problems using number sentences and choose calculation strategies, using digital tools where appropriate; interpret and communicate solutions in terms of the situation **(AC9M3N06)**.
- Follow and create algorithms involving a sequence of steps and decisions to investigate numbers; describe any emerging patterns **(AC9M3N07)**.

Algebra

- Recognise and explain the connection between addition and subtraction as inverse operations, apply to partition numbers and find unknown values in number sentences **(AC9M3A01)**.
- Extend and apply knowledge of addition and subtraction facts to 20 to develop efficient mental strategies for computation with larger numbers without a calculator **(AC9M3A02)**.
- Recall and demonstrate proficiency with multiplication facts for 3, 4, 5 and 10; extend and apply facts to develop the related division facts **(AC9M3A03)**.

Tier One Whole Class Differentiation

Most classes have students working across broad range of levels. Teachers can differentiate the Bond Blocks Activities in a range of ways using either whole-class or group-rotation approach to teaching.

Building Routines

When introducing Bond Blocks to whole class of Year One students many teachers choose to complete the first chapter of tier one activities (Chapter 2 Bonds of 5) with the whole class. This helps establish routines. Completing this chapter takes the whole of Term One.

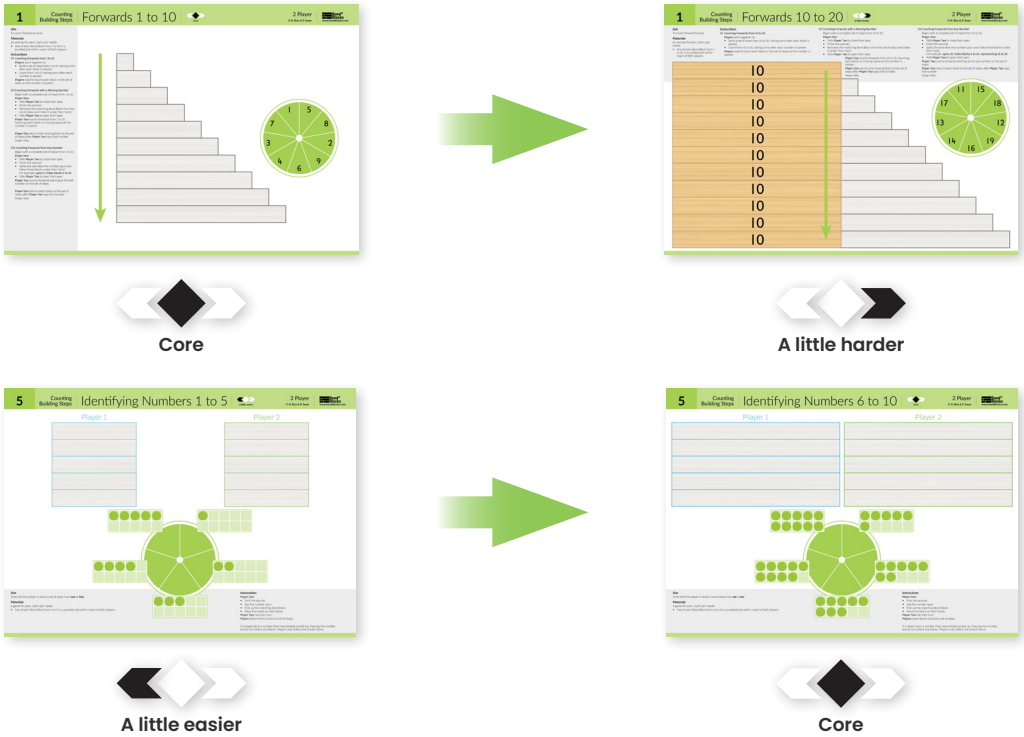
When the class begins the next chapter of activities (Chapter 3 Doubling and Halving to 10), some teachers use this as an opportunity to create another group that works at a different level, on a different chapter of activities. For example, an extension group that continues to work through the chapters in order but from a different chapter further on based on their test results.

There are two different options to differentiate: **(1)** Whole Class Differentiation, **(2)** Group Differentiation

(1) Whole Class Differentiation

To differentiate Bond Blocks using a whole-class teaching approach:

- The whole class focuses on the same core activity. Differentiate using the **'a little easier'** and **'a little harder'** activities.



- The whole class focuses on the same **type** of activity. For example, Bonds Building a Wall. Students complete the same type of activity but from different bond chapters.
  The same type of activity becomes increasingly difficult, in two ways, as it is repeated in each chapter of the system:
  (i) The size of the whole increases.
  (ii) The difficulty of the mathematics increases in systematic increments.

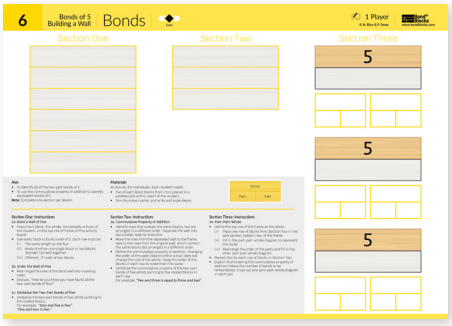
(2) Group Differentiation

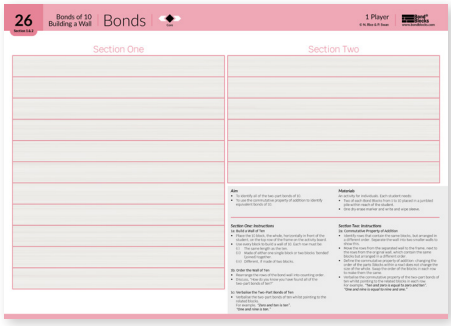
To differentiate Bond Blocks using a group-rotations teaching approach:

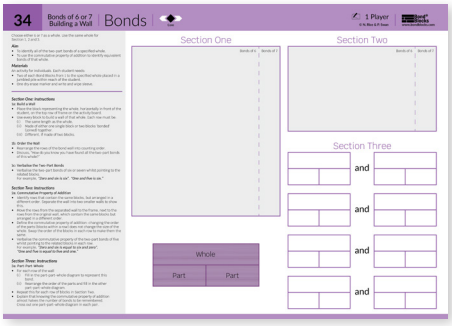
- Students working at a similar level can be grouped together. All students in this group complete the same activity at the same time. This allows the teacher to focus teaching one concept to all students in that group. The explicit teaching focus and activity for each group would vary.
- Students working at different levels can be grouped together. The teacher can differentiate within the group by either:

  i. Adjusting the one core activity using the **'a little easier'** and **'a little harder'** activities or

  ii. Choosing the same type of activity from different chapters.







Each of these boards is an example of the same activity (Building a Wall) from different chapters.

Bond Blocks works well as part of mental maths group rotations. In the first session of the week the teacher works with the group to introduce the activity. In the following two sessions that week the group repeats the activity independently to develop fluency. Groups of 4 to 6 students work well. Most activities are pair activities.

Group Rotations Sample Planner

Rotation 1	Monday	Tuesday	Wednesday	Thursday	Friday
Groups 1 and 2	Whole Class Mental Maths Activity	Bond Block Teaching: Explicit introduction of activity. (8 min)	Bond Block Practice: Repetition of introduced activity. (8 min)	Bond Block Practice: Repetition of introduced activity. (8 min)	Mental Maths Games
Groups 3 and 4		Bond Block Practice: Repetition of introduced activity. (8 min)	Bond Block Teaching: Explicit introduction of activity. (8 min)	Bond Block Practice: Repetition of introduced activity. (8 min)	Mental Maths Games
Groups 5 and 6		Bond Block Practice: Repetition of introduced activity. (8 min)	Bond Block Practice: Repetition of introduced activity. (8 min)	Bond Block Teaching: Explicit introduction of activity. (8 min)	Mental Maths Games

For mental maths game ideas visit the Paul Swan's website (**www.drpaulswan.com.au**). There are lots of board, dice, domino and card game resources such as "Mathematics Games with School Friendly Cards".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