Friends of 10 - Informal.

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Differentiate and Assess

Not every student will be ready to investigate this concept at this Level and so we will need to differentiate to ensure every student is learning at their leading edge. Select the Differentiate button on this screen.

Integrate

Every mathematical concept is integrally related to other mathematical concepts. Teaching and learning related concepts simultaneously develops deep relational understanding. Select the Integrate button on this screen.

Intervene

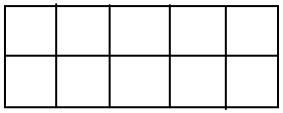
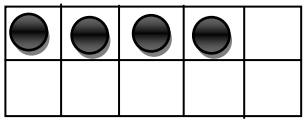
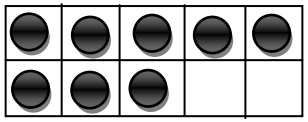
Some students may not yet be ready to investigate this concept at any Level, and so we will need to provide some intervention. Select the Intervention button on this screen.

FRIENDS OF 10 - INFORMAL.

EXPLICIT TEACHING PLAN OVERVIEW PAGE

THIS PAGE IS A SUMMARY OF THE EXPLICIT TEACHING PLAN, INCLUDING STRATEGIC QUESTIONS, AND DESRIBING THE SEQUENCE WHICH WILL OCCUR OVER MULTIPLE LESSONS.

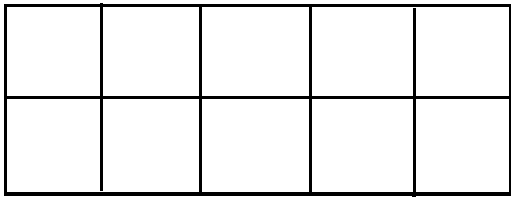
RESOURCES:NUMBER CARDS,CONNECTING BLOCKS, PENCIL, PAPER

WHAT COULD WE DO?	WHAT LANGUAGE COULD WE USE TO EXPLAIN AND ASK QUESTIONS?
Children: • investigate a 10 frame, for example,  • place up to 5 counters onto a 10 frame, using 5 as a reference, for example,  • place more than 5 counters onto a 10 frame, for example,  • identify how many more are needed to make 10 - friends of 10	Children • ask one another questions about placing and counting counters on 10 frames, for example: ▸ How could we describe this 10 frame? ▸ Why do you think it is called a 10 frame? ▸ How many spaces in the 10 frame? ▸ How many spaces in the top row? ▸ How many spaces in the bottom row? ▸ How could we place 4 counters on the 10 frame, filling the top row first from the left? ▸ How could we place 4 counters on the 10 frame, filling the top row first from the left, then the bottom row from the left? ▸ How many counters in the top row? ▸ How many counters in the bottom row? ▸ How many counters altogether? ▸ How many more to make 10?

FRIENDS OF 10 - INFORMAL.

EXPLICIT TEACHING PLAN

FULL EXPLICIT TEACHING PLAN, EMBEDDING DEEP RELATIONAL UNDERSTANDING, METALANGUAGE, AND QUESTIONS THAT MAY BE USED OVER MULTIPLE LESSONS.

WHAT COULD WE DO?	WHAT LANGUAGE COULD WE USE TO EXPLAIN AND ASK QUESTIONS?
Children think about, talk and listen to a friend about, then have the opportunity to share what they already know.	► Today brings an investigation about 10 frames. ► What do you know about friends of 10? ► Talk about friends of 10with a friend. ► Is anyone ready to share what they are thinking about friends of 10?
Display a 10 frame, for example, 	► **How could you describe this?** ► What shape is it? ► Is it a rectangle? ► How many spaces in the rectangle? ► Are there 10 spaces in the rectangle? ► This is called a 10 frame. ► Why do think this is called a 10 frame? ► Is it called a 10 frame because there are 10 spaces?
Point to the rows	► This is a row. ► And this is a row. ► How many rows? ► Are there 2 rows?
Point to the top row	► This is the top row.
Point to each space in the top row	► How many spaces in the top row?

Point to the bottom row

Point to each space in the bottom row

- Are there 5 spaces in the top row?
- This is the bottom row.
- How many spaces in the bottom row?
- Are there 5 spaces in the bottom row?
- Do you think you could draw a 10 frame? Let's investigate!

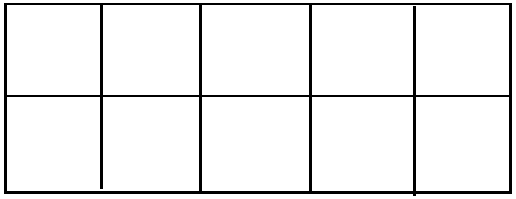
Draw the rectangle, for example,

- Could we draw the rectangle first?

Draw the rectangle, for example,

- Could we draw the line that goes across the middle of the 10 frame?

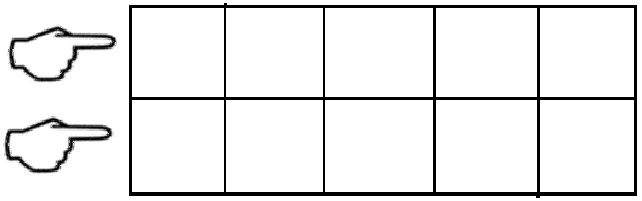
Draw the 4 lines going down, for example,



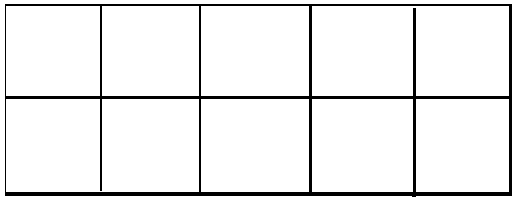
- How many lines are there going down?
- Are there 4 lines going down?
- Are they all bunched up together, or are they spread out?
- Are they spread out?
- Let's draw the 4 lines going down

NB: Children will get better at drawing 10 frames over time. Drawing their own 10 frames allows children to develop understanding of friends of 5 and friends of 10

Point to the rows, for example,

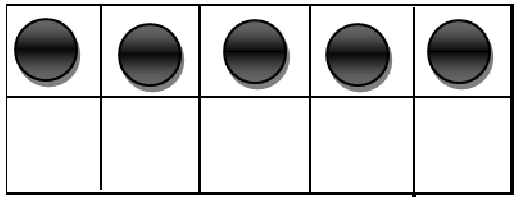


Count the 5 spaces in each row, for example,

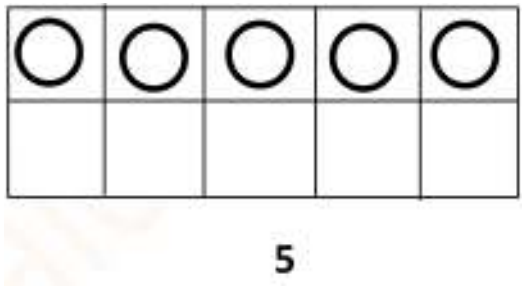


- What have we drawn? Have we drawn a 10 frame?
- Why is it called a 10 frame?
- Can you count the spaces?
- Are there 10 spaces?
- Is that why it's called a 10 frame?
- How many rows on the 10 frame?
- Are there 2 rows?
- How many spaces in the top row?
- Are there 5 spaces on the top row?
- How many spaces in the bottom row?
- Are there 5 spaces on the bottom row?

Place 5 counters onto the 10 frame, filling from the top row on the left, for example,



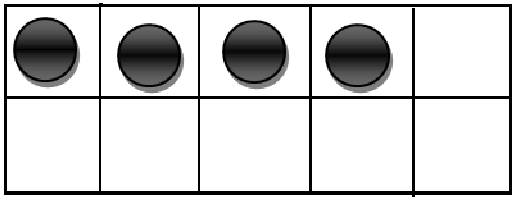
Record the 5 counters in the 10 frame and the number 5, for example,



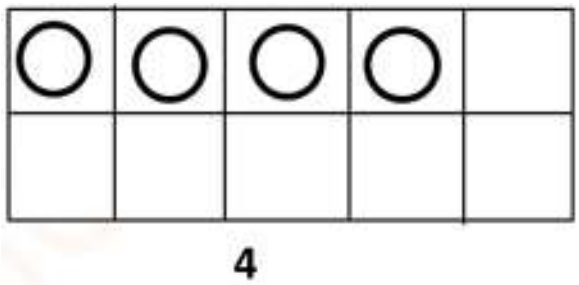
- **Let's put some counters onto the top row of the 10 frame.**
- When we put counters onto a 10 frame, we always fill from the top row on the left.
- Let's place 5 counters onto the 10 frame, filling from the top row on the left.

- How many counters in the top row?
- Are there 5 counters in the top row?
- Is the top row full?
- Why is the top row full?
- When the top row is full, are there 5 counters?
- Did we place a counter into each of the 5 spaces?
- How could we record this?

Place 4 counters onto the 10 frame, filling from the top row on the left, for example,



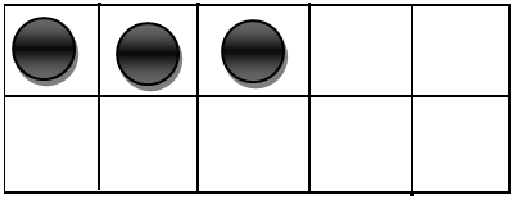
Record the 4 counters in the 10 frame and the number 4, for example,



- Let's put some counters onto the top row of the 10 frame.
- When we put counters onto a 10 frame, we always fill from the top row on the left.
- **Let's place 4 counters onto the 10 frame, filling from the top row on the left.**

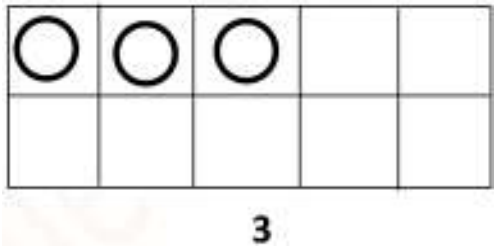
- How many counters in the top row?
- Are there 4 counters in the top row?
- Is the top row full?
- How many empty spaces?
- Is there 1 empty space?
- When the top row has 1 empty space, are there 4 counters?
- Did we place a counter into 4 of the spaces?
- How could we record this?

Place 3 counters onto the 10 frame, filling from the top row on the left, for example,

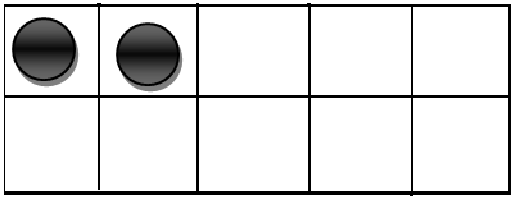


- Let's put some counters onto the top row of the 10 frame.
- When we put counters onto a 10 frame, we always fill from the top row on the left.
- Let's place 3 counters onto the 10 frame, filling from the top row on the left
- How many counters in the top row?
- Are there 3 counters in the top row?
- Is the top row full?
- How many empty spaces?
- Are there 2 empty spaces?
- When the top row has 2 empty spaces, are there 3 counters?
- Did we place a counter into 3 of the spaces?
- How could we record this?

Record the 3 counters in the 10 frame and the number 3, for example,



Place 2 counters onto the 10 frame, filling from the top row on the left, for example,



- Let's put some counters onto the top row of the 10 frame.
- When we put counters onto a 10 frame, we always fill from the top row on the left.
- Let's place 2 counters onto the 10 frame, filling from the top row on the left
- How many counters in the top row?

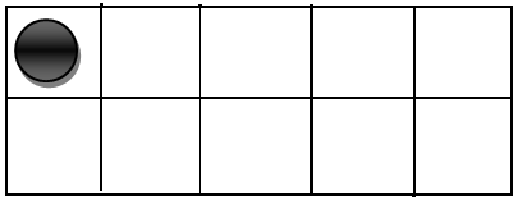
- Are there 2 counters in the top row?
- Is the top row full?
- How many empty spaces?
- Are there 3 empty spaces?
- When the top row has 3 empty spaces, are there 2 counters?
- Did we place a counter into 2 of the spaces?
- How could we record this?

Record the 2 counters in the 10 frame and the number 2, for example,

2

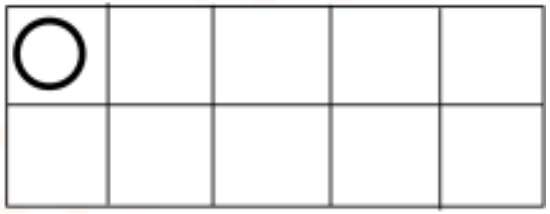
Place 1 counter onto the 10 frame, filling from the top row on the left, for example,

- Let's put some counters onto the top row of the 10 frame.
- When we put counters onto a 10 frame, we always fill from the top row on the left.
- Let's place 1 counter onto the 10 frame, filling from the top row on the left



- How many counters in the top row?
- Is there 1 counter in the top row?
- Is the top row full?
- How many empty spaces?
- Are there 4 empty spaces?
- When the top row has 4 empty spaces, is there 1 counter?
- Did we place a counter into 1 of the spaces?

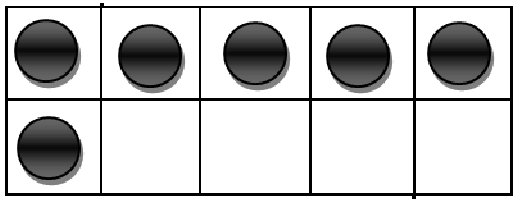
Record the 1 counter in the 10 frame and the number 1, for example,



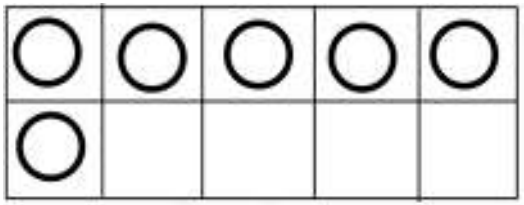
1

- How could we record this?

Place 6 counters onto the 10 frame, filling from the top row on the left then the bottom row on the left, for example,



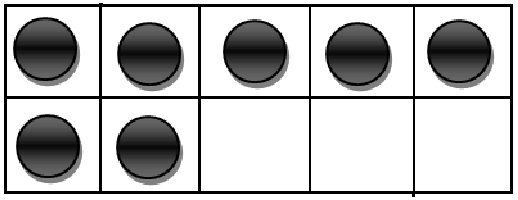
Record the 6 counters in the 10 frame and the number 6, for example,



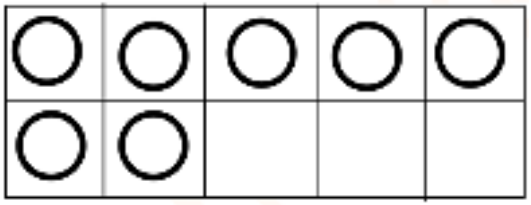
6

- Let's put some counters onto both rows of the 10 frame.
- When we put counters onto a 10 frame, we always fill from the top row on the left.
- **Let's place 6 counters onto the 10 frame, filling from the top row on the left, then the bottom row on the left.**
- How many counters in the top row?
- Are there 5 counters in the top row?
- How do you know?
- Is the top row full?
- When the top row is full, are there 5 counters?
- How many counters in the bottom row?
- Is there 1 counter in the bottom row?
- Is the bottom row full?
- How many spaces in the bottom row?
- Are there 4 spaces in the bottom row?
- When there is 1 counter in the bottom row, are there 4 spaces?
- How many counters altogether?
- Are there 6 counters altogether?
- How do you know?
- Does 5 in the top row and 1 in the bottom row make 6?
- How could we record this?

Place 7 counters onto the 10 frame, filling from the top row on the left then the bottom row on the left, for example,



Record the 7 counters in the 10 frame and the number 7, for example,

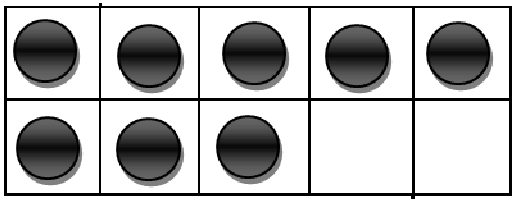


7

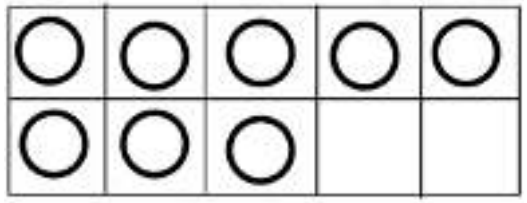
- Let's put some counters onto both rows of the 10 frame.
- When we put counters onto a 10 frame, we always fill from the top row on the left.
- Let's place 7 counters onto the 10 frame, filling from the top row on the left, then the bottom row on the left.

- How many counters in the top row?
- Are there 5 counters in the top row?
- How do you know?
- Is the top row full?
- When the top row is full, are there 5 counters?
- How many counters in the bottom row?
- Are there 2 counters in the bottom row?
- Is the bottom row full?
- How many spaces in the bottom row?
- Are there 3 spaces in the bottom row?
- When there are 2 counters in the bottom row, are there 3 spaces?
- How many counters altogether?
- Are there 7 counters altogether?
- How do you know?
- Does 5 in the top row and 2 in the bottom row make 7?
- How could we record this?

Place 8 counters onto the 10 frame, filling from the top row on the left then the bottom row on the left, for example,



Record the 8 counters in the 10 frame and the number 8, for example,

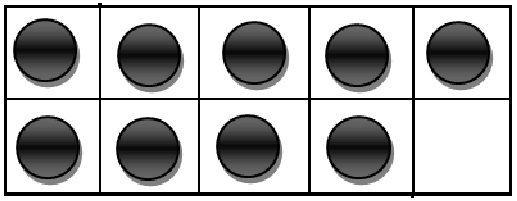


8

- Let's put some counters onto both rows of the 10 frame.
- When we put counters onto a 10 frame, we always fill from the top row on the left.
- Let's place 8 counters onto the 10 frame, filling from the top row on the left, then the bottom row on the left.

- How many counters in the top row?
- Are there 5 counters in the top row?
- How do you know?
- Is the top row full?
- When the top row is full, are there 5 counters?
- How many counters in the bottom row?
- Are there 3 counters in the bottom row?
- Is the bottom row full?
- How many spaces in the bottom row?
- Are there 2 spaces in the bottom row?
- When there are 3 counters in the bottom row, are there 2 spaces?
- How many counters altogether?
- Are there 8 counters altogether?
- How do you know?
- Does 5 in the top row and 3 in the bottom row make 8?
- How could we record this?

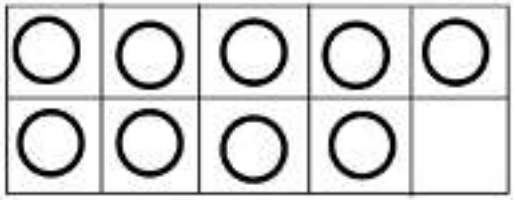
Place 9 counters onto the 10 frame, filling from the top row on the left then the bottom row on the left, for example,



- Let's put some counters onto both rows of the 10 frame.
- When we put counters onto a 10 frame, we always fill from the top row on the left.
- Let's place 9 counters onto the 10 frame, filling from the top row on the left, then the bottom row on the left.

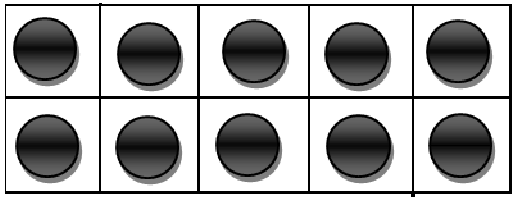
- How many counters in the top row?
- Are there 5 counters in the top row?
- How do you know?
- Is the top row full?
- When the top row is full, are there 5 counters?
- How many counters in the bottom row?
- Are there 4 counters in the bottom row?
- Is the bottom row full?
- How many spaces in the bottom row?
- Is there 1 space in the bottom row?
- When there are 4 counters in the bottom row, is there 1 space?
- How many counters altogether?
- Are there 9 counters altogether?
- How do you know?
- Does 5 in the top row and 4 in the bottom row make 9?
- How could we record this?

Record the 9 counters in the 10 frame and the number 9, for example,

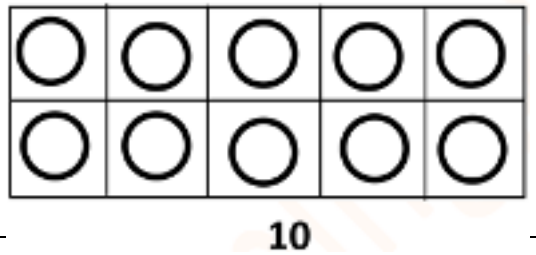


9

Place 10 counters onto the 10 frame, filling from the top row on the left then the bottom row on the left, for example,



Record the 10 counters in the 10 frame and the number 10, for example,

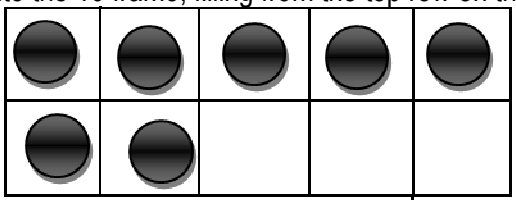


- Let's put some counters onto both rows of the 10 frame.
- When we put counters onto a 10 frame, we always fill from the top row on the left.
- Let's place 10 counters onto the 10 frame, filling from the top row on the left, then the bottom row on the left.

- How many counters in the top row?
- Are there 5 counters in the top row?
- How do you know?
- Is the top row full?
- When the top row is full, are there 5 counters?
- How many counters in the bottom row?
- Are there 5 counters in the bottom row?
- Is the bottom row full?
- When the bottom row is full are there 5 counters?
- How many counters altogether?
- Are there 10 counters altogether?
- How do you know?
- Does 5 in the top row and 5 in the bottom row make 10?
- How could we record this?

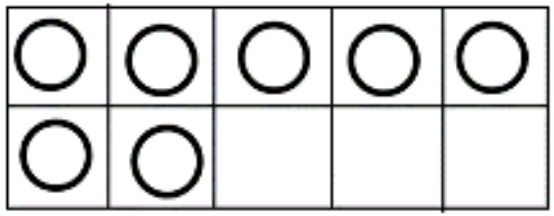
Select a numeral card, for example,

Place 7 counters onto the 10 frame, filling from the top row on the left, for example,



- **We've investigated 10 frames**.
- And we found that there are 10 spaces on a 10 frame.
- Let's select a card
- What number did we select?
- Did we select 7?
- Let's place 7 counters onto the 10 frame, filling from the top row on the left, then the bottom row on the left.
- How many counters in the top row?
- How do you know?
- Are there 5 counters in the top row?
- Do you know because the top row is full?
- How many counters in the bottom row?
- How do you know?
- Are there 2 counters in the bottom row?
- Do you know because you can subitise the 2 counters?
- How many counters altogether?
- How do you know?
- Are there 7 counters altogether?
- Do you know because you counted the 7 counters?
- Does 5 in the top row and 2 in the bottom row make 5?
- How many counters do we need to make 10?
- Do we need 3 more counters to make 10?
- How do you know?

Record the 7 counters in the 10 frame and the number sentence 7 and 3 is 10, for example,

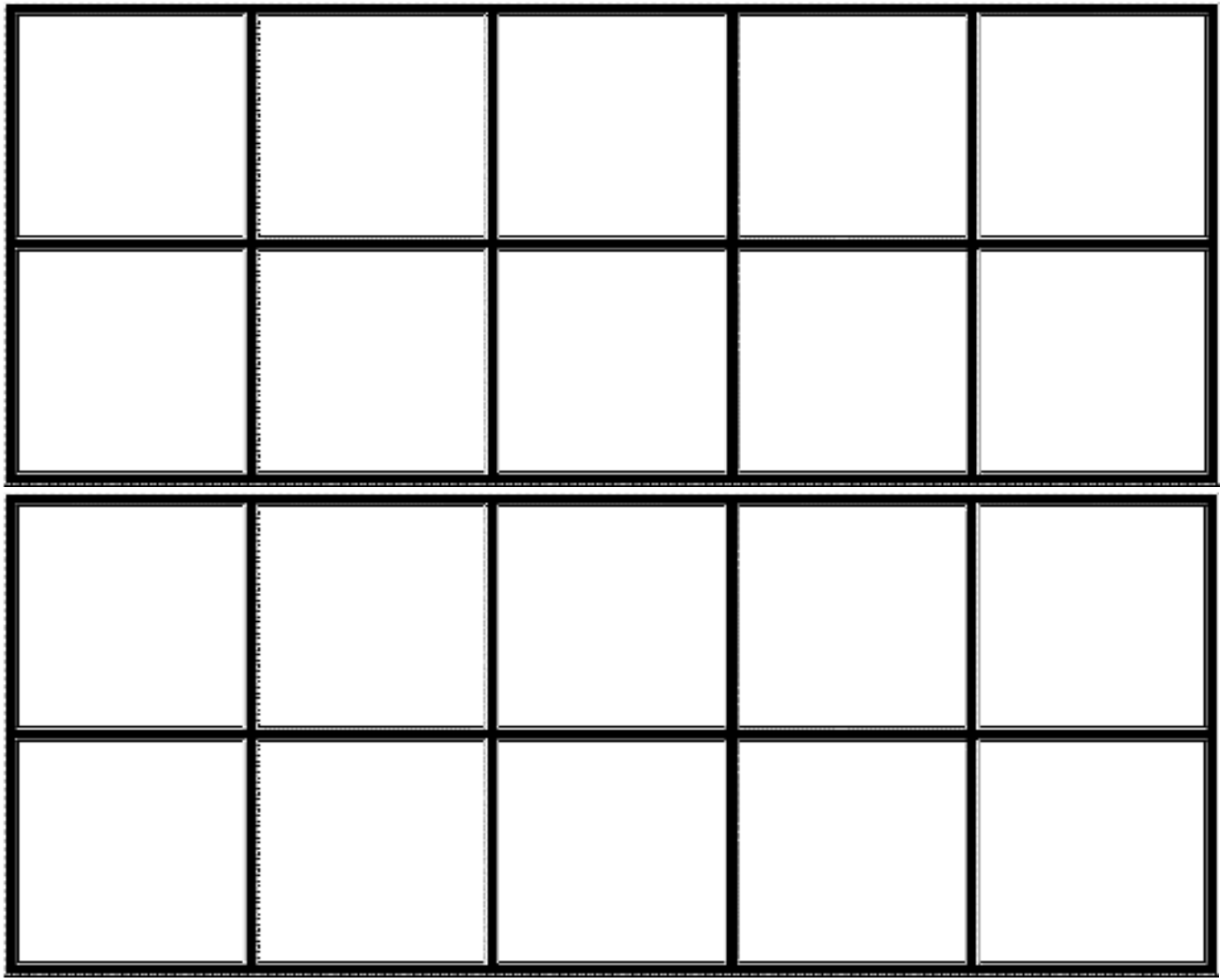


7 and 3 is 10

Record, for example, 7 and 3 are friends of 10

- Do you know because you can see the 3 empty spaces?
- How could we record this?
- Because 7 and 3 is 10, we call 7 and 3, friends of 10
- What is 7's friend of 10?
- Is 7's friend of 10, 3?

Empty 10 frame (print, cut out and distribute one 10 frame to each child) back



Numerals 0 – 10(print, cut out and distribute to each child)