

## Overview:

This program is designed to help students to see the relationships between the numbers to 20 and for students to know their addition number facts to 20 using ten frames as a visual prompt. Using the app students can:

- Subitize the numbers to 10 and 20
- Explore numbers to 10 and 20
- Visualize addition number facts to 10 or 20
- Visualize subtraction number facts from up to 10 or 20

The screenshot shows the 'TEN FRAMES' app interface. At the top left is the 'Tool Panel' with various icons for manipulation. In the center are two ten frames: the left one contains 9 red counters and the right one contains 6 green counters. To the right of the ten frames is an 'EQUATION' box showing  $9 + 6 = 15$  and a 'NAME' box showing 'fifteen'. At the bottom left is a 'Key Pad' with numbers 0-9, '+', '-', and 'Diff'. Below the key pad is a 'NUMERAL' box showing '15'. To the right of the numeral is a 'COUNTERS' box with a small ten frame icon. A ladybug character is visible in the bottom right corner of the app screen.

**Tool Panel:** multiple tools allow for manipulation on screen

**Ten Frame/s:** displays the single or double ten frames

**EQUATION:** hides or shows the number or the equation shown on the ten frames

**Key Pad:** for entering numbers

**NUMERAL:** hides or shows the written form of the number

**COUNTERS:** hides or shows the counters on the ten frames

**NAME:** hides or shows the spelling of the number

**Tool Panel:**



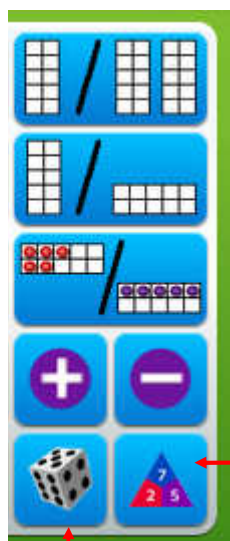
**Pointer:** resets cursor to a pointer

**Pen:** hold down to select from nine shades available, draw on the screen with pen

**Eraser:** removes all pen marks

**Information:** information about Ten Frames app

**Reset:** resets all settings back to a default; remembers settings of single / double ten frames, vertical / horizontal display, pairs / rows layout.



**Single / double ten frames:** choose to display numbers to 10 or to 20

**Vertical / horizontal display:** choose to display as vertical or horizontal

**Pairs / rows layout:** choose to display counters in rows or pairs

**Count on or back:** adds or takes one counter

**Number facts:** pop out allows for selection of selected set of addition or subtraction facts and randomly displays them

**Random number:**

- Randomly selects single numbers to 10 or 20 (select one or two ten frames)
- Allows for exploration of addition facts to a selected sum after an equation has been entered on the keypad first  
e.g.  $3 + 4 = 7$  then roll the dice and a new expression for 7 will be shown, such as  $6 + 1 = 7$
- Allows for exploration of subtraction facts from a selected starting number after an equation has been entered on the keypad  
e.g.  $12 - 4 = 8$  then roll the dice and a new subtraction equation from 12 will be shown, such as  $12 - 7 = 5$

**Keypad:**



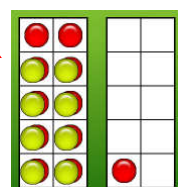
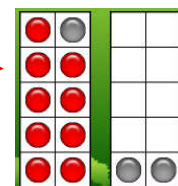
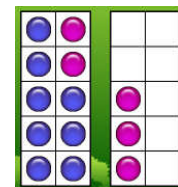
**Add:** allows addition of numbers to 10, if a single ten frame is selected, or 20, if double ten frames are selected

**Subtract:** allows subtraction of numbers from 10, if a single ten frame is selected, or 20, if double ten frames are selected

**Difference between:** allows for comparison of numbers; enter 11 Diff 8 and the counters will be displayed on top of each other to reveal the difference between the 2 numbers.

**10:** to key in numbers with one or two tens; so to key in 14, click 10 then 4; for 20 click 10 twice

**TEN FRAMES**



**Random number:**

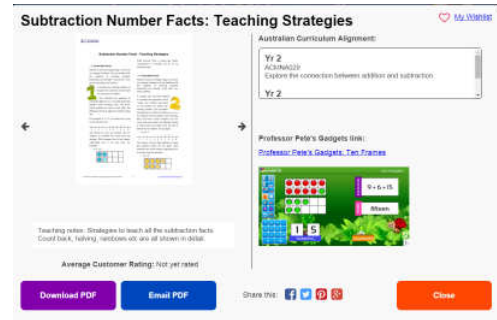
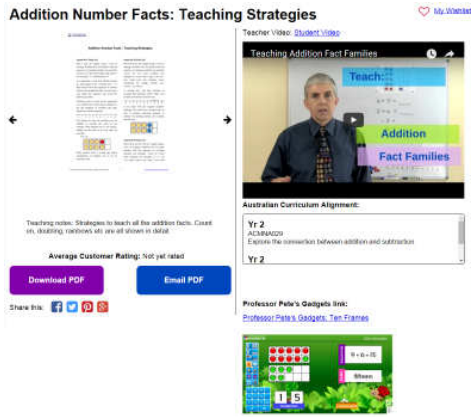
The random number button behaves differently depending on which presets are chosen.

Preselect	Dice Behaviour
	<p><b>Randomly selects numbers:</b>                      Choose 1 ten frame for numbers to 10                      Choose 2 ten frames for numbers to 20                      Select vertical or horizontal layouts                      Select rows or pairs layout   Roll the dice and a random number within those parameters will be selected</p>
	<p><b>Exploring numbers, addition:</b> to explore a specific number showing its addition facts                      E.g. to explore 12 use the keypad to type in "10 + 2 OK"   Roll the dice.                      Addition facts to 12 will be randomly selected.</p>
	<p><b>Exploring numbers, subtraction:</b> to explore a specific number showing its subtraction facts                      Use the keypad to type in "12 - 2 OK"   Roll the dice.                      Subtraction facts from 12 will be randomly selected.</p>

## Addition and Subtraction Number Facts:

TEN FRAMES

**N.B.** The number facts that can be selected are based on our system to cover all number facts using thinking strategies. Please refer to the documents on Teaching Strategies for [Addition Number Facts](#) and [Subtraction Number Facts](#) on our website.



Click and **hold down** the Number Facts button and a pop out box will appear.

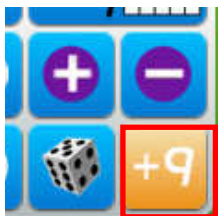
- Select between addition or subtraction facts



- From the selection, choose the facts you are currently working on.  
E.g. +9 selected



- Once selected the pop out box will disappear and the Number Facts button will act as a random fact selector. Click this for more random facts in the same number fact set.



- Click the Reset button to clear the selection.

