

Professor Pete's Gadgets: Ten Frames

This interactive teaching app has a powerful function that allows for addition and subtraction to be shown on Ten Frames.

Intended learning outcomes:

- Demonstrate familiarity with addition number facts within 0 to 10
- Demonstrate familiarity with subtraction number facts within 0 to 10
- Develop strategies for finding number facts using visual prompts

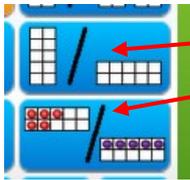
Main Interface:

The screenshot shows the main interface of the 'Professor Pete's Classroom' app. A large red-bordered box in the center contains a 'PREVIEW' message: 'This is a PREVIEW. Subscribe today for a whole year's access to ALL our worksheets and videos! Already a subscriber? Log in to download the full version of this worksheet.' To the right of the text is a cartoon illustration of Professor Pete, a man in a black graduation cap and gown, holding a green pencil. Below the preview box is a green background with a key pad on the left, a 'NUMERAL' display showing '0', and 'COUNTERS' on the right. Several callout boxes with red arrows point to specific features:

- Toolbox:** tools allow for manipulation and counting
- Single Ten Frame:** (points to the ten frame area)
- EQUATION:** hides or shows the equation
- NUMERAL:** hides or shows the symbolic form of the number
- COUNTERS:** hides or shows the counters on the ten frames
- NAME:** hides or shows the number name
- Key Pad:** for entering numbers for display
- Addition, Subtraction:** click and hold down for pop-out box to reveal selector panel

Random Addition and Subtraction Number Facts:

TEN FRAMES



- Choose between horizontal or vertical ten frame layout
- Choose between pairs or rows arrangements



- Click and hold down the Number Facts button and a pop-out panel will appear.
- Select addition or subtraction facts
- **Addition:** With the single ten frame selected, the count on 1, 2, 3, the doubles / doubles+1 and rainbow facts strategies can be selected.

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- Once a selection is made, the pop out box will disappear and the Number Facts button will act as a random fact selector. Click this +2 button again for more random facts in the same number fact set.
- Click the Reset button to clear the selection, allowing for selection of new number facts

Use of the keypad:



Select: numbers to be displayed.

Add: addition of numbers to 10, the limit for a single ten frame

Subtract: subtraction of numbers from numbers to 10, the limit for a single ten frame

Difference between: allows for comparison of numbers; e.g., enter "8" "Diff" "3" and 3 counters will be displayed on top of 8 to reveal the difference between the two numbers.

Lesson Plan

1. Close the book.
2. Enter an equation.
3. Discuss the equation and the addition.
4. Show students how to use the keypad.
5. Open the book.
6. Check the answer.
7. Discuss the answer.
8. Show both on-screen.
9. Discuss *What is different?* (the counters are a different colour). *Does it matter which way around the numbers are written? Is the answer different?*
10. Repeat the above steps with a new equation.

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TEN FRAMES

●	
●	●
●	●
●	●

EQUATION

NAME

●	
●	●
●	●
●	●

EQUATION

NAME

$2 + 5 = 7$

7	8	9	+
4	5	6	-
1	2	3	Diff
0	10		

NUMERAL COUNTERS