Adding Fractions

• Objective •

Understand and use fractions.
Calculate with fractions and understand the results.

• • • • • • • • • • • • • • • Explanation of the activity • • • • • • • • • • • • • • •

Using the calculator, find the sum of two given fractions each having 1 in the numerator.
Look for patterns to help understand how to add the fractions without using the calculator.
This activity suggests an approach to teaching addition of common fractions.

• • • • • • • • • • • • • • • • Using the calculator • • • • • • • • • • • • • • • • •

Calculator functions used: Addition, fractional calculation

Press the following buttons and then start operation.

[ON/C] [MODE] [0]

Example:

Using fractional calculation, find the sum of $\frac{1}{2}$ and $\frac{1}{3}$.

1 [ab/c] 2 [+] 1 [ab/c] 3 [=]

```
1⌐2+1⌐3=   DEG
        5⌐6.
```

$\frac{1}{2} + \frac{1}{3} =$ on the calculator display means $\frac{5}{6}$.

Convert $\frac{5}{6}$ to decimal notation.

[ab/c]

```
1⌐2+1⌐3=   DEG
   0.833333333
```

0.83333··· [ab/c] on the calculator display means $\frac{5}{6}$.

Find the sums of other common fractions.

1 [ab/c] 5 [+] 1 [ab/c] 7 [=]

[ab/c]

```
1⌐5+1⌐7=   DEG
       12⌐35.
```

```
1⌐5+1⌐7=   DEG
   0.342857142
```

Adding Fractions

• • • • • • • • • • • Using the activity in the classroom • • • • • • • • • •

This activity should be presented after studying equivalence of common fractions.

The activity is best introduced orally. Ensure that the students know how to add two common fractions on the calculator. Ask them to add 1/2 and 1/3 and record the answer (5/6). Ask the students if they can see any connection between the answer and the original two fractions. Students may note that 2 + 3 = 5 and 2 x 3 = 6. Allow students to explore other unit fractions and encourage them to generalize. Students should be asked to try and explain what is happening. It should be noted that the pattern may appear to break down when fractions with a common denominator are added.

• • • • • • • • • • • • • Points for students to discuss • • • • • • • • • • • • •

Students can then explore what happens when other common fractions are added. For some students, it may be appropriate to begin by considering a pair of fractions that includes one unit fraction.

It is important that students are encouraged to understand what is happening, and that reference is made to equivalent fractions.

Further Ideas
• Investigate subtracting, multiplying or dividing common fractions.

• The Babylonians mostly used fractions which had 1 as the numerator. For example, 5/6 could be written as 1/2 + 1/3. Investigate Babylonian fractions.