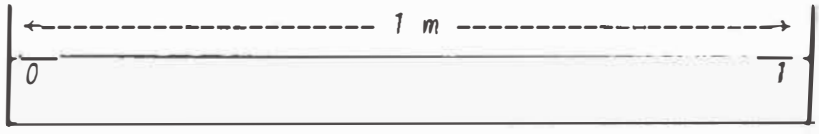
IDEAS for Junior High

Tom Kieren

Folding Fractions

Material needed: Calculator tape, colored pencils or pens.

1. Measure a strip of calculator tape exactly one metre long. Cut it so the ends are perpendicular to its length.



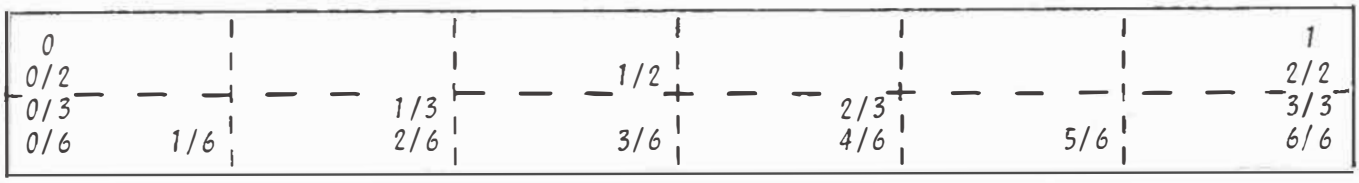
   Label the ends 0 and 1.

2. Fold the strip exactly in two and label the appropriate points 0/2, 1/2, 2/2 with a colored pen.

3. Now fold your strip exactly in three parts. Label the appropriate points 0/3, 1/3, 2/3, 3/3 using a different colored pen.

4. Use your "third" folds to fold the strip exactly in six parts of the same size. Are any folds the same as previous folds? Why?

   Label the folds 0/6, 1/6, 2/6, 3/6, 4/6, 5/6, 6/6. Use a different colored pen. Your strip should look like:



5. Do the following folding and labeling.

a) Fold your strip into 4 parts of the same size. Label 0/4, 1/4, 2/4, 3/4, 4/4 using a new color.

b) Fold your strip into 8 parts and label in the same way as above using a new color.

c) Fold your strip into 16 parts and label using a new color.

d) Fold your strip into 12 parts and label using a new color.

6. Use your strip to answer the following.

a) Which is larger: 2/3 or 5/8? How can you tell?

b) Arrange in order from smallest to largest:

2/3, 5/16, 5/6, 7/8, 1/2, 3/8, 1/12, 1/6

How do you make decisions about these?

*c) Where would 7/32 fit in the list? How could you tell?

d) List fractions which are the same as or equivalent to:

1/2 :

How did you know?

e) Make lists of equivalent fractions.

3/8, _____, _____

0, 0/2, _____, _____, _____, _____, _____

3/4, _____, _____, _____, _____

2/6, _____, _____, _____, _____

4/12, _____, _____, _____, _____

*6/24, _____, _____, _____, _____

*2/5, _____, _____, _____, _____

f) How would you find more fractions to put on the 1/3 fold?

Would 18/27 be on the 1/3 fold? Why?

Would 10/40 be on the 1/3 fold? Why?

*Complete this general label for the 1/3 fold.

$$\frac{\quad}{3 \times k}$$

7. a) Invent a way of using your strip to add fractions.

Can you get results greater than 1?

b) Invent a way of using your strip to subtract fractions. ■