Fractions *(Keeler)*

1. Into how many parts must we divide things equally so that each get a similar share?

share an apple - each get one half

share a chocolate bar - each get one third

share an orange - each get one fourth

[The idea that one half is one of two equal parts, and one third is one of three equal parts, etc. is important.]

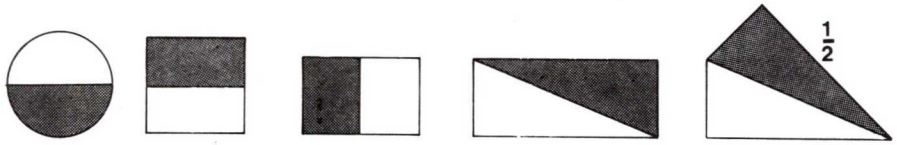
2. Pour a jar of sand into smaller jars. In how many ways can you divide it equally?

3. Pour koolaid into a measuring cup. How many equal parts make one cup?

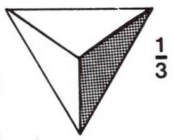
fourths 4 $\frac{1}{4}$ $\frac{2}{4}$ $\frac{3}{4}$ $\frac{4}{4}$ thirds 3 $\frac{1}{3}$ $\frac{2}{3}$ $\frac{3}{3}$

4. In how many ways can you fold or cut paper to show

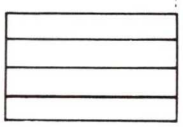
halves



thirds

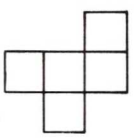


fourths



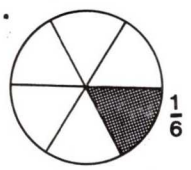
How many parts in each picture?
How many fourths make one half?

Fold your paper to make five equal parts
In how many ways can you fold it and make

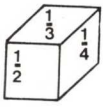


open boxes?

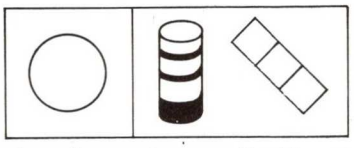
Fold circular and rectangular cut-outs to make the smaller fractions.



5. Play "Conquer." Dice are marked with simple fractions
The game board has figures shaped to match the various
fractions on the dice.



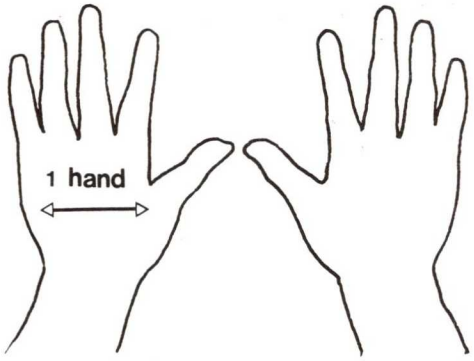
6. Geoboard Fraction Exercises
a) How much of each unit is shaded?

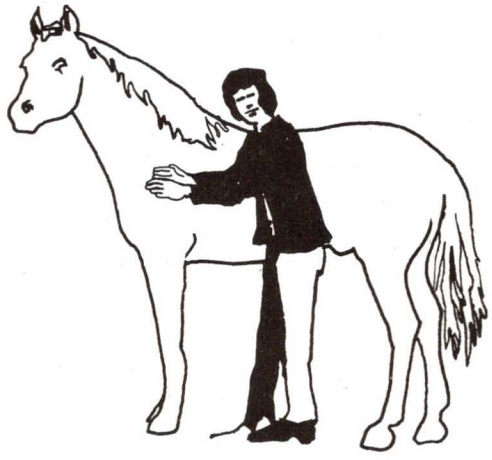


b) Join dots to make each unit show the fraction. Indicate color.

[Tasks 3 to 6 above can be rotated so that each group tries two or three different ones. A check-up here would be a good idea.]

7. People do not walk around carrying a ruler with them. The height of a horse is measured in *hands*.

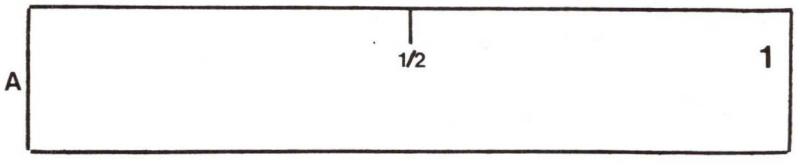




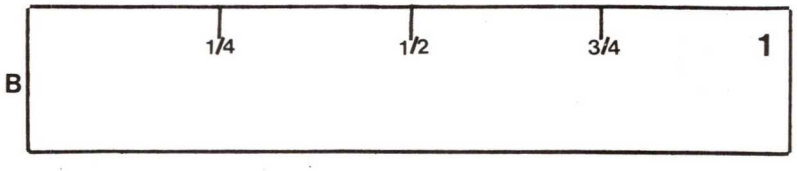
How many things can you measure with your hands (for example, books, desk top, skipping rope)? Compare your measurements with those of your classmates. Make a graph to show the differences.

8. Estimate your height in hands.

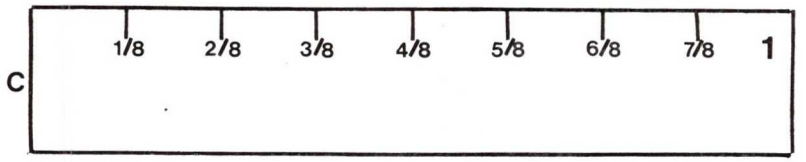
Each person's hand is a little different so a standard unit of measurement should be used. Four inches is an average hand so make hand rulers that size. A hand ruler can be divided into fractions of hands in order to measure precisely.



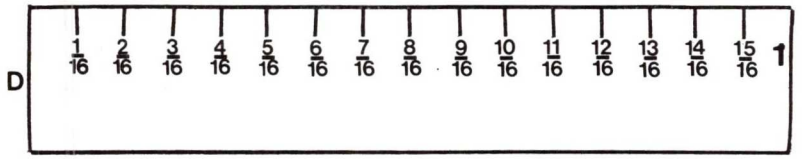
a) Divide ruler A into two equal parts (mark and label it). Each half is considered half a hand.



b) Divide ruler B into four equal parts. The length of each part is one quarter hand.



c) Divide ruler C into eight equal parts. Each part is (___) of a hand. Label your ruler.



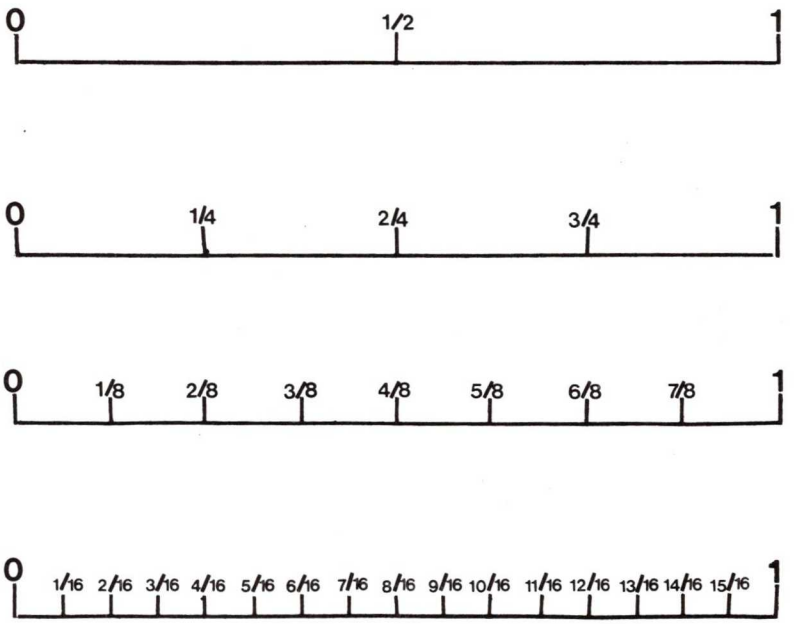
d) Divide ruler D into 16 equal parts. Each part is (___) of a hand. Label your ruler.

e) These rulers can be made of bristol board and used to measure different objects. Measure the car below.

Compare results with different rulers: Ruler A 1/2, Ruler B 2/4, Ruler C 4/8, Ruler D 8/16.

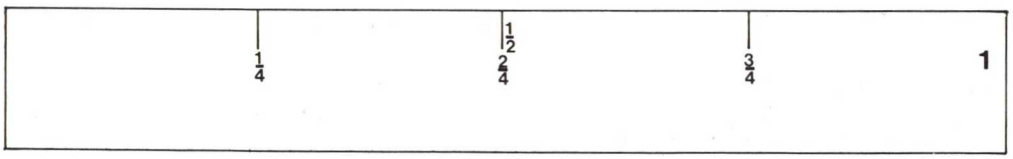
f) Do the measures show the same lengths? These fractions are equal since they are all measuring the same car.

9. Refer to your rulers to see which fractions are equal.

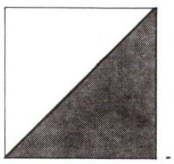


10. With adding machine tape, about 30" long, the students work in groups. By folding, mark 1/2, 1/4, 1/3, 1/6, 2/3, 2/6, 3/4, etc. Look for equivalent fractions. This works best if students work first with one denomination and then refold for others.

    With the tape it is easy to see that (__) is larger than 1/4, and smaller than 1/2, but not half way between *(from workshop with Dr. Harrison)*.

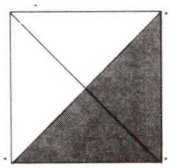


11. Sandwich fractions - equal fractions can be shown by "sandwich" pictures. Think of each square as one sandwich. Cut it into two equal parts



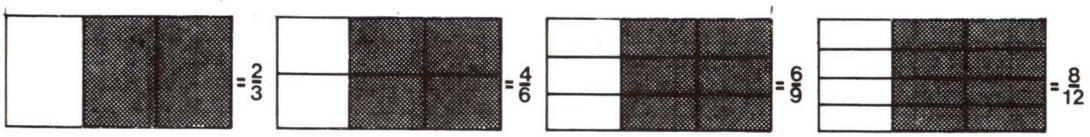
    How many halves in 1?
    1 = 2/2
    Each part is 1/2 sandwich

    Cut it into four equal parts



    It takes two of these parts to make 1/2 of one sandwich
    2/4 = 1/2

12. Shade (__) of each picture and then have the students tell about each. How many names for the same colored area? The fractions are equal because they all show the same amount.



13. Play a simple game of one-a-part. [*Use only the fractions the students are used to and at first do not convert the fraction to the same denominator or expect the children to add 3/6 and 4/8 to get 1.*] Add 2/8 and 6/8, or 2/3 and 1/3, etc.

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