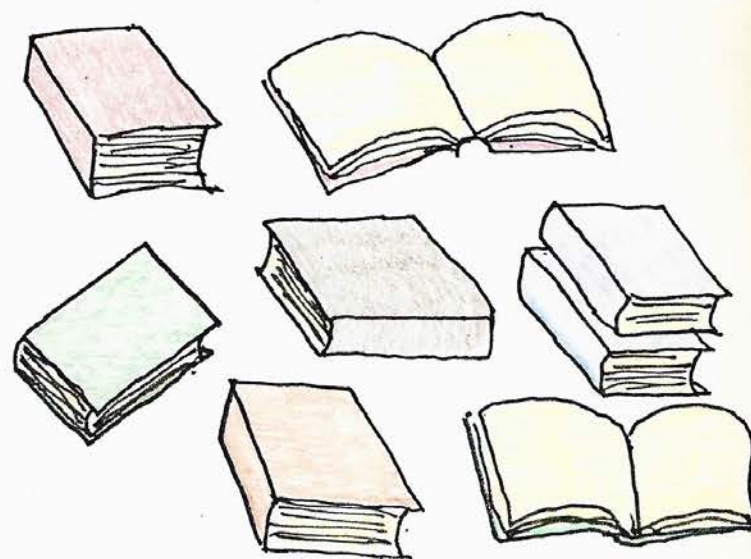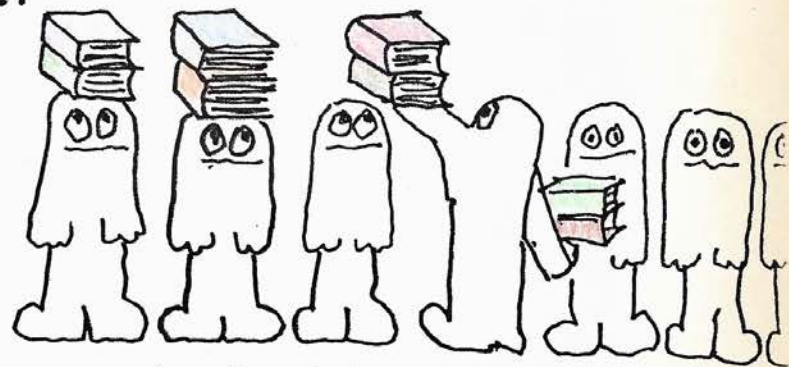# CHAPTER 1

MEASUREMENT DIVISION WITHOUT REMAINDERS

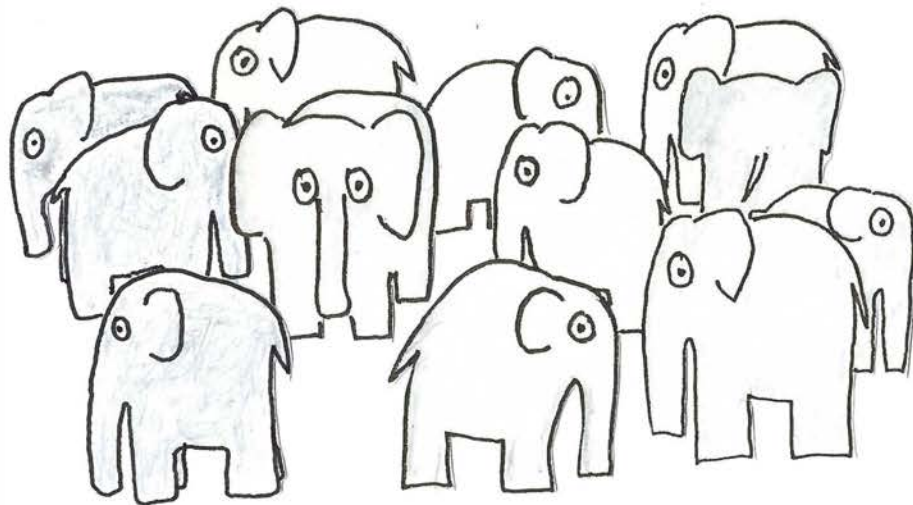## A MANIPULATIVE METHOD

DIVISION WITH REAL THINGS

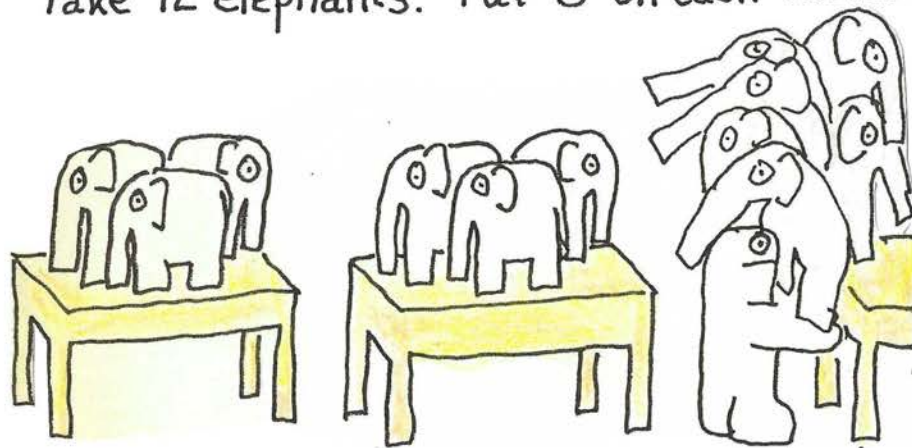Take 8 books. Put 2 books on each head:

How many heads did you use?

DIVISION WITH MAKE-BELIEVE THINGS

Take 12 elephants. Put 3 on each table.

(If you don't happen to have 12 elephants, use 12 slips of paper and pretend.)

How many tables did you use?

HOW MANY SETS?

Take 12 slips of paper. → Make sets of 2.

How many sets can you make?

Take the same 12 slips: → Make sets of 4.

How many sets can you make?

Take the same 12 slips: → Make sets of 6.

How many sets can you make?

LEARN THE CODE

Look at each code, then read what it means. Guess what words are under the horn. (But don't do what the words tell you to do — that's what the <u>next</u> page is all about.)

THE CODE:	WHAT THE CODE MEANS:
$2\overline{)10}$	Take 10 slips of paper. Make sets of 2.
$3\overline{)12}$	Take 12 slips Make sets of
$5\overline{)10}$	Take 1 slips of paper. Make
$2\overline{)14}$	Take paper. Make sets

USE THE CODE

Figure out what each code means, then do what it tells you to do. How many sets can you make?

1. $2\overline{)10}$ 2. $3\overline{)12}$

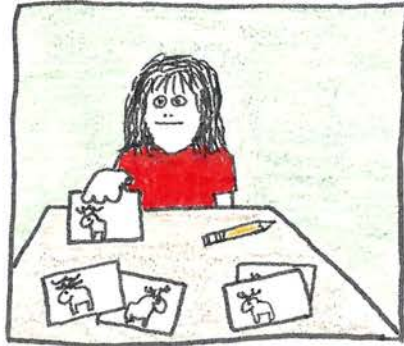3. $5\overline{)10}$ 4. $2\overline{)14}$

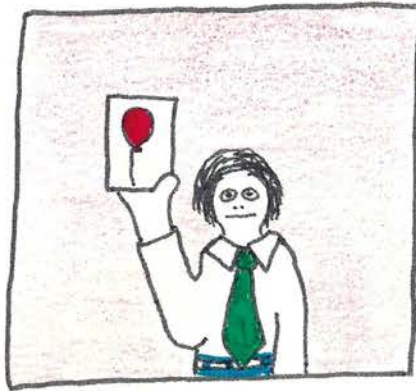5. $4\overline{)16}$ 6. $3\overline{)9}$

7. $2\overline{)8}$ 8. $3\overline{)15}$

ANYTHING YOU LIKE

As you do the problems on the next page, pretend that each slip of paper is a refrigerator,

or a banana..................or a moose.......

or a shovel..................or a balloon......

or anything else you can think of.

USE YOUR IMAGINATION

Make sets of bananas, or light bulbs, or shovels, or anything else. How many sets can you make for each problem?

1. $2\overline{)16}$ 2. $4\overline{)12}$ 3. $3\overline{)9}$

4. $2\overline{)12}$ 5. $4\overline{)8}$ 6. $2\overline{)16}$

7. $5\overline{)15}$ 8. $2\overline{)18}$ 9. $5\overline{)20}$
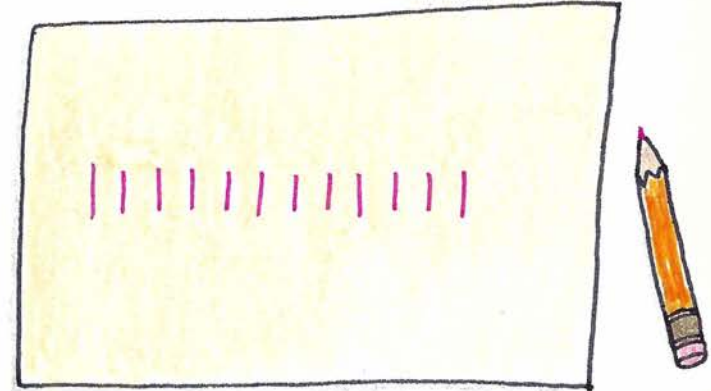
CHAPTER 2

MEASUREMENT DIVISION
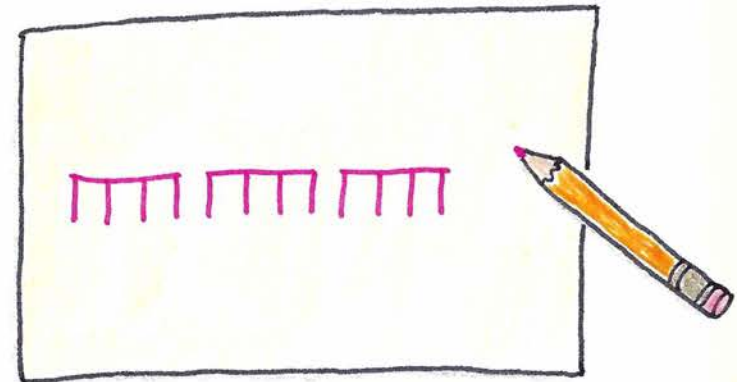WITHOUT REMAINDERS

A PICTORIAL METHOD

HOW TO DRAW TABLES
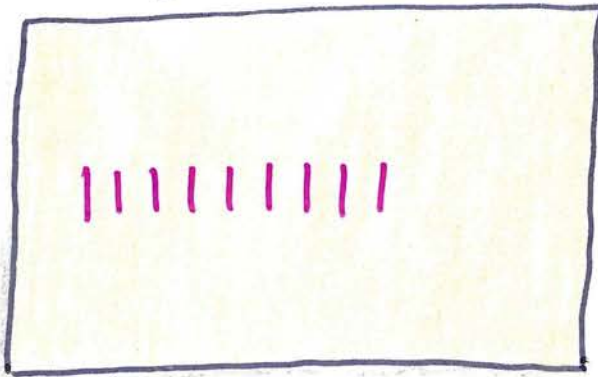
First draw 12 legs on a sheet of paper:

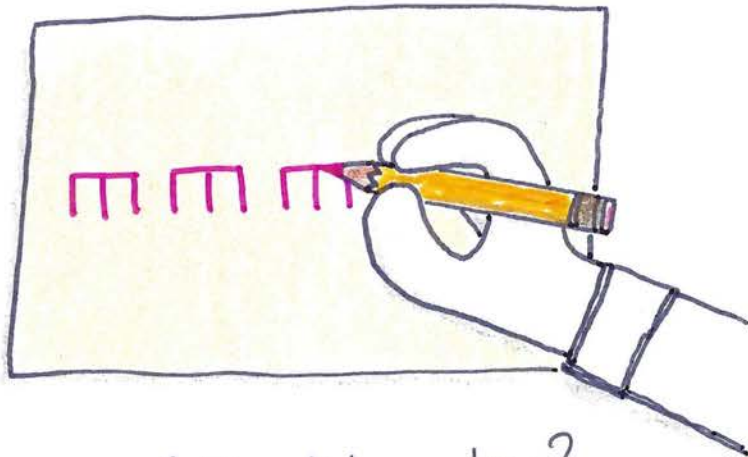Then, starting at the left, draw a tabletop for each 4 legs:

Look at what you did. How many tables did you draw?
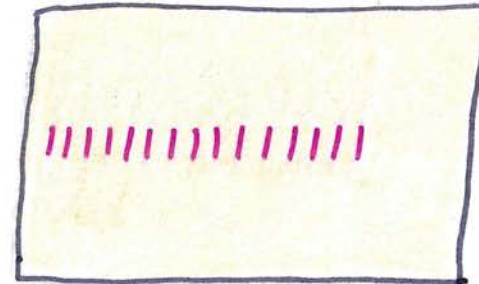
3-LEGGED TABLES

Draw 9 legs:

Then, starting at the left, draw a tabletop for every 3 legs:

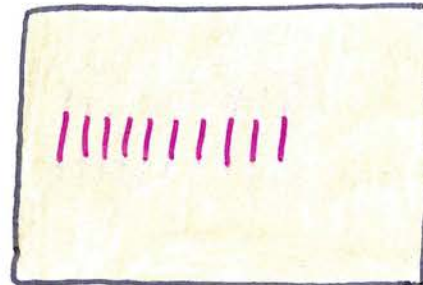How many tables did you draw?

MORE DIVISION TABLES

Draw 15 legs:

Draw a tabletop for every 5 legs.
How many tables do you get?

Draw 10 legs:

Draw a top for every 2 legs.
How many tables do you get?

LEARN THE CODE

Look at each code, then read what it means. Guess what words are under the doughnut. (But don't do what the words tell you to do — that's what the <u>next</u> page is all about.)

THE CODE: WHAT THE CODE MEANS:

$4\overline{)8}$
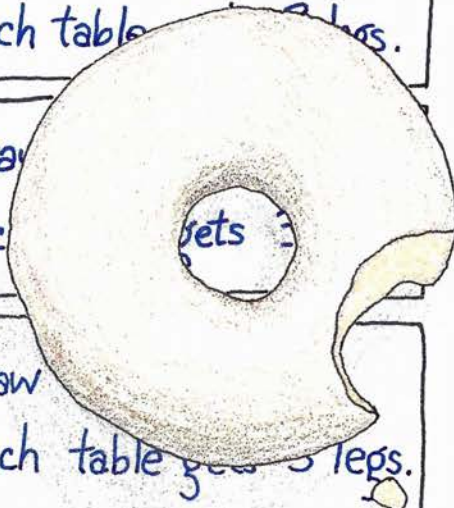
Draw 8 legs.
Each table gets 4 legs.

$2\overline{)12}$

Draw 12 legs.
Each table ...

$3\overline{)6}$

Dra...
Eac... gets ...

$5\overline{)15}$

Draw ...
Each table ... legs.

USE THE CODE

Figure out what each code means, then draw the tables that it tells you to draw. How many tables do you get?

1. $4\overline{)8}$ 2. $2\overline{)12}$

3. $3\overline{)6}$ 4. $5\overline{)15}$

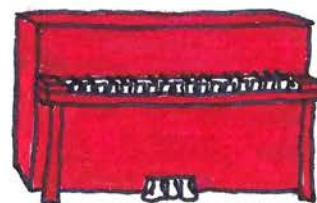5. $4\overline{)16}$ 6. $6\overline{)12}$
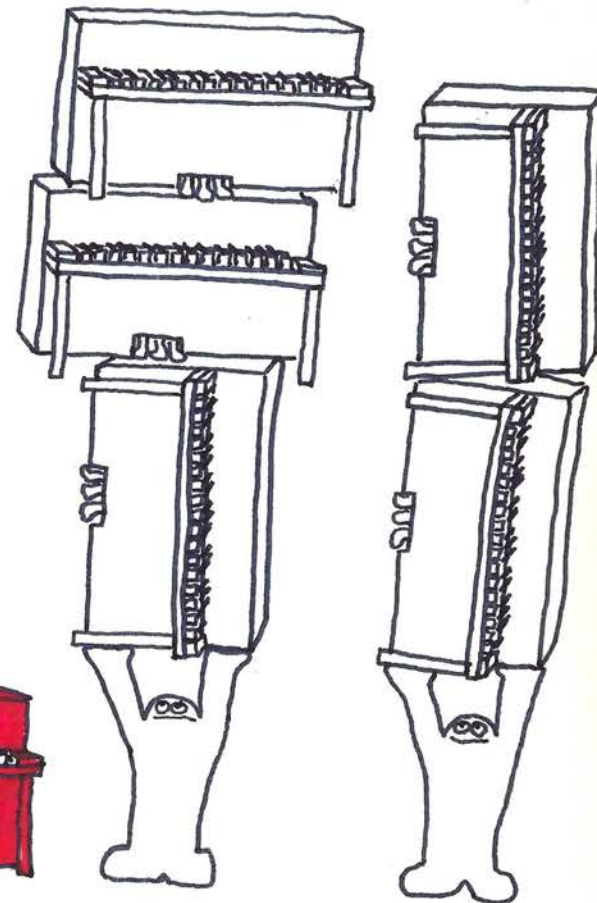
7. $2\overline{)6}$ 8. $3\overline{)18}$

CHAPTER 3

PARTITIVE DIVISION
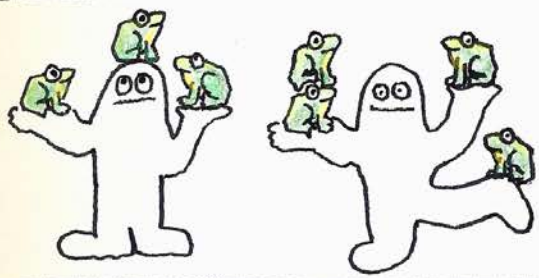WITHOUT REMAINDERS

A MANIPULATIVE METHOD
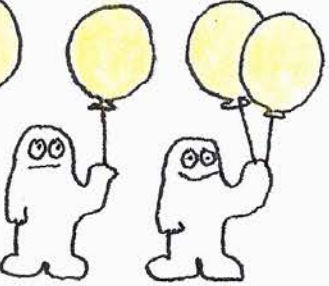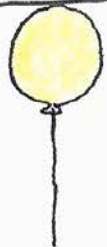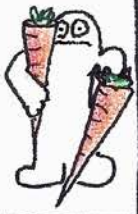
BE FAIR

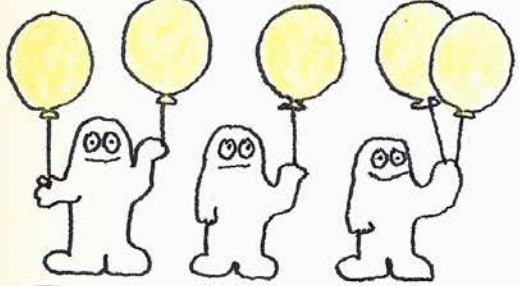Who should carry the red piano?

WHO SHOULD GET THE EXTRAS?

EXTRA PINEAPPLES
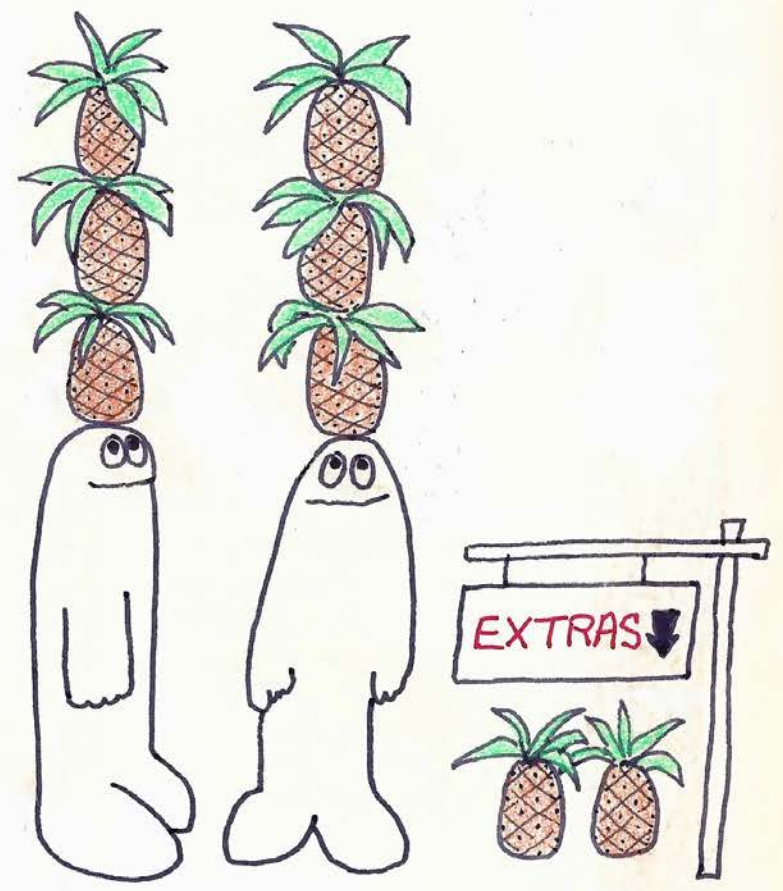
EXTRA

EXTRAS

Who should get the extras?

NEXT?

Be fair. Who should take the next tomato?

BOWLING BALLS

Be fair. What should happen with the next 3 bowling balls?
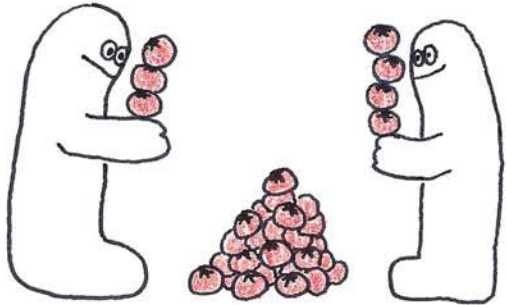
Be fair. What should happen with the next 2 baseballs?
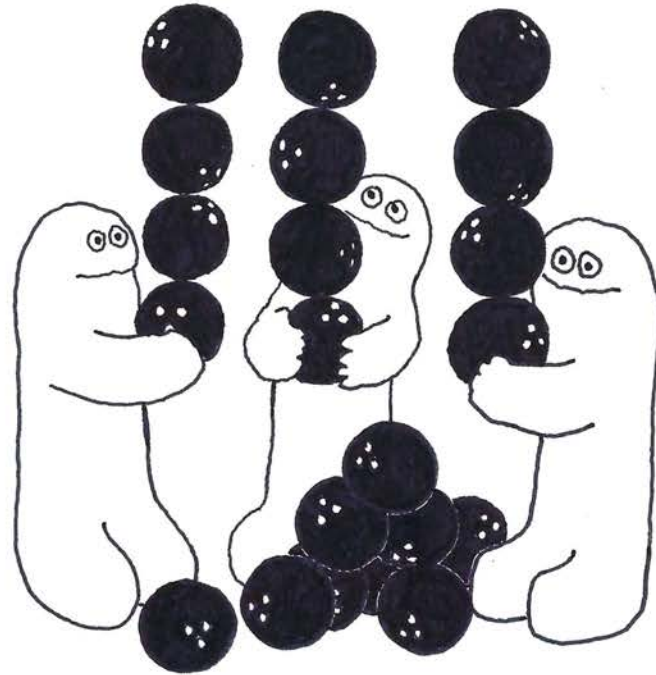
3 FAIR GROUPS

Use 11 slips of paper. Make 3 groups just like these:

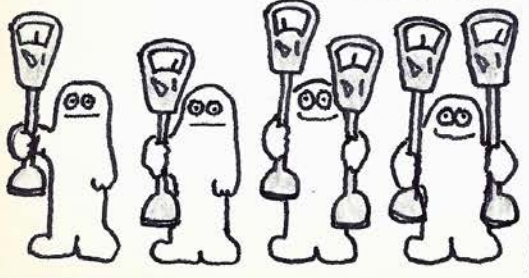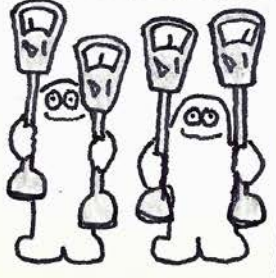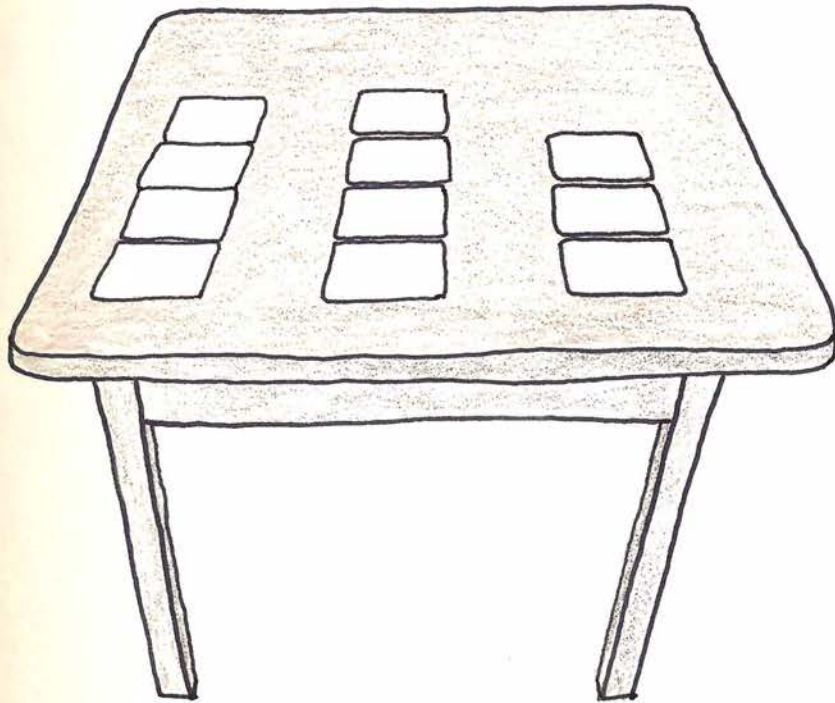Then, get one more slip of paper. Use the new slip to make the groups fair.

2 FAIR GROUPS

Use 10 slips of paper. Make 2 groups just like these:
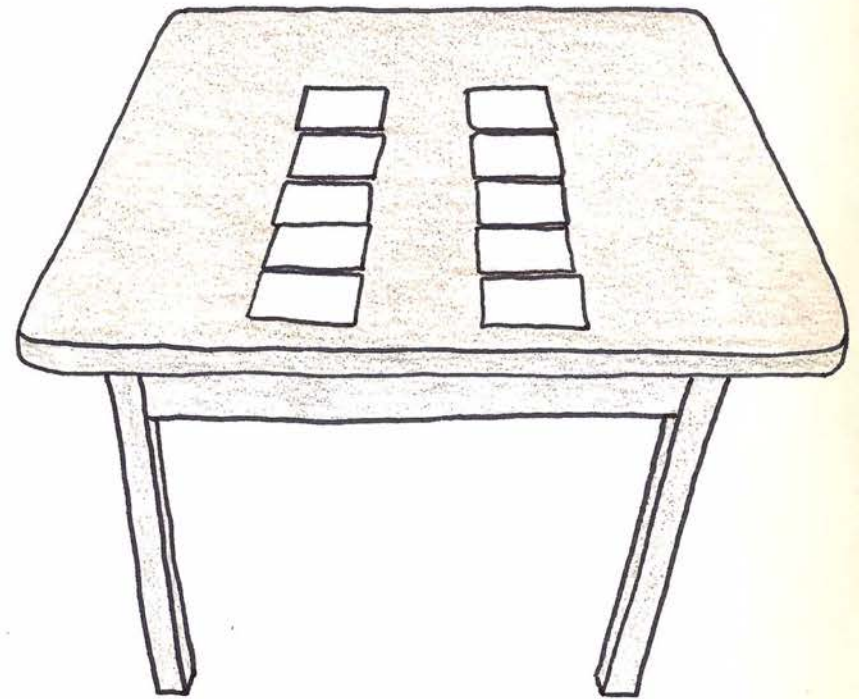
Get 2 more slips of paper. Can you find a fair way to use the 2 new slips?

4 MORE SLIPS

Make 2 groups just like these:
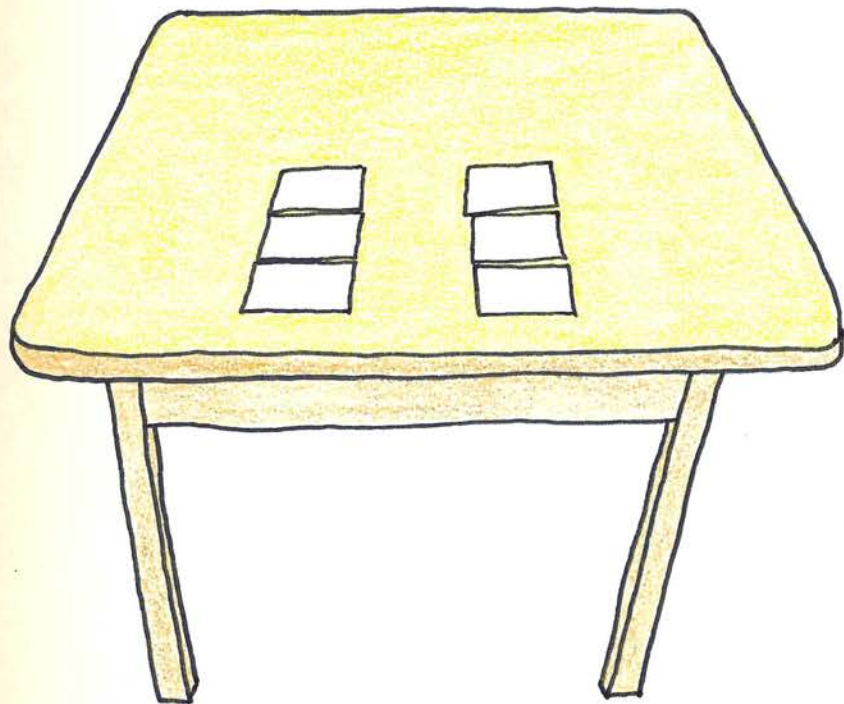
Then get 4 more slips of paper. Can you find a fair way to give out the new slips?

15 SLIPS OF PAPER

Use 15 slips of paper. Try to make 3 fair groups.
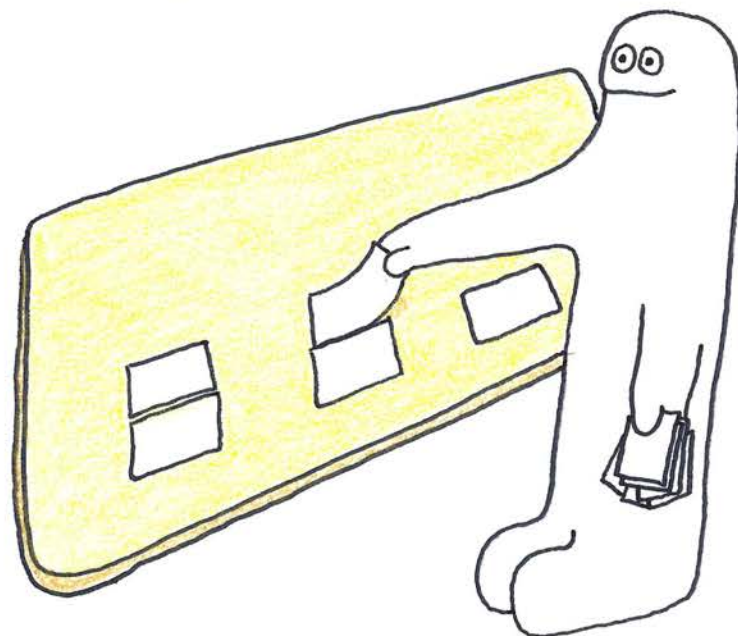
When you have used all 15 slips, count the slips in each group. How many are in each group?

4 FAIR GROUPS

Take 20 slips of paper. Try to make 4 fair groups.
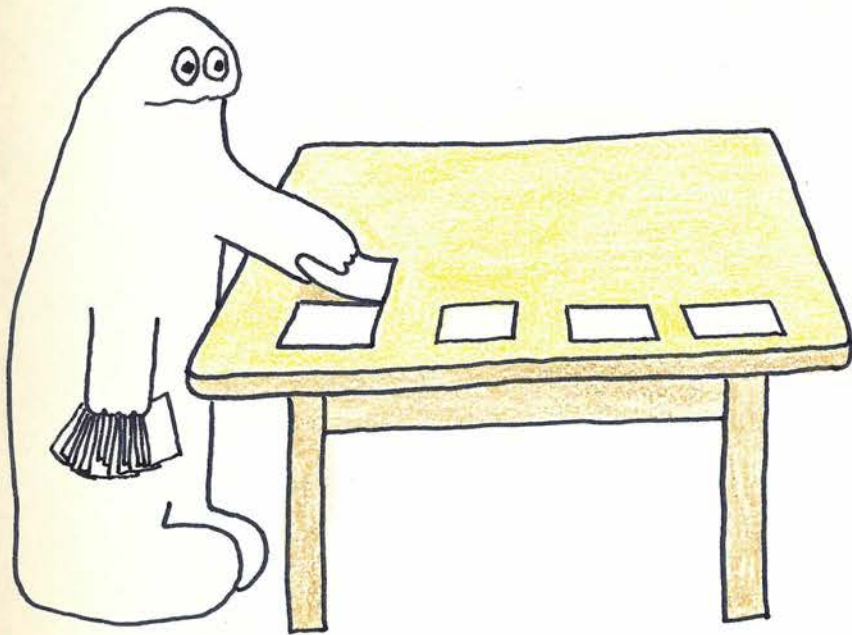
How many slips ended up in each group?

MORE FAIR DEALING

Take 15 slips of paper. Try to make 5 fair groups.
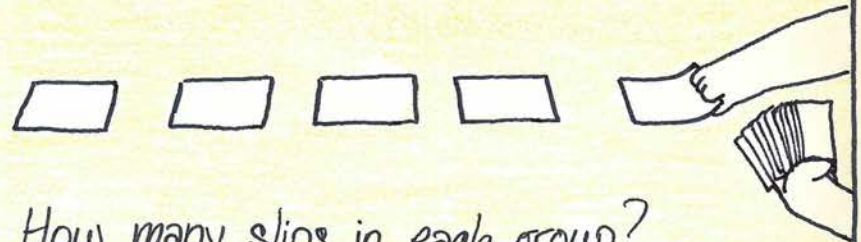
How many slips in each group?

Take 8 slips of paper. Make 2 fair groups.
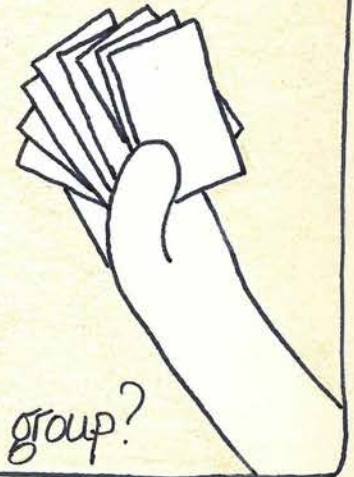
How many slips in each group?

LEARN THE CODE

Look at each code, then read what it means. Guess what words are under the turtle. (But don't do what the words tell you to do — that's what the <u>next</u> page is all about.)

THE CODE:	WHAT THE CODE MEANS:
$2\overline{)10}$	Take 10 slips of paper. Make 2 fair groups.
$2\overline{)6}$	Take 6 slips of paper. Make _ _ oups.
$3\overline{)6}$	_ _ aper.
$3\overline{)18}$	Take _ _ per. Make _ air groups.
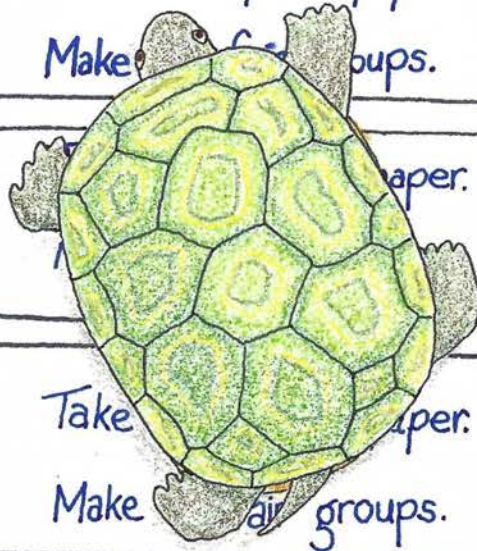
USE THE CODE

Figure out what each code means, then do what it tells you to do. How many slips end up in each group?

1. $2\overline{)10}$ 2. $2\overline{)6}$

3. $3\overline{)6}$ 4. $3\overline{)18}$

5. $2\overline{)14}$ 6. $4\overline{)8}$

7. $2\overline{)12}$ 8. $5\overline{)20}$

ANYTHING YOU LIKE

As you do the problems on the next page, pretend that each slip of paper is a cookie,

or a turtle........................... or a pillow...........

or a television................ or a pineapple........

or anything else you can think of.

USE YOUR IMAGINATION

How many turtles, rocking chairs, kangaroos, or pineapples end up in each group?

1. $5\overline{)10}$ 2. $3\overline{)12}$ 3. $2\overline{)8}$

4. $2\overline{)20}$ 5. $3\overline{)9}$ 6. $4\overline{)12}$

7. $2\overline{)16}$ 8. $3\overline{)15}$ 9. $4\overline{)20}$
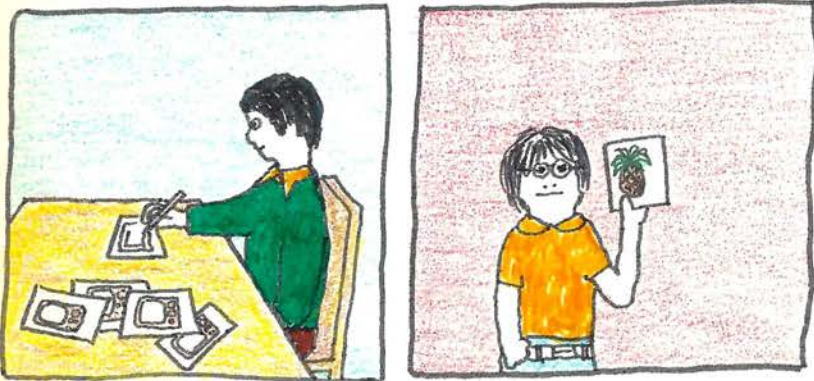
CHAPTER 4

PARTITIVE DIVISION
WITHOUT REMAINDERS

A PICTORIAL METHOD

PENCIL AND PAPER

Draw 2 rings. Then draw 6 X's.
Try to end up with 2 <u>fair</u> sets.
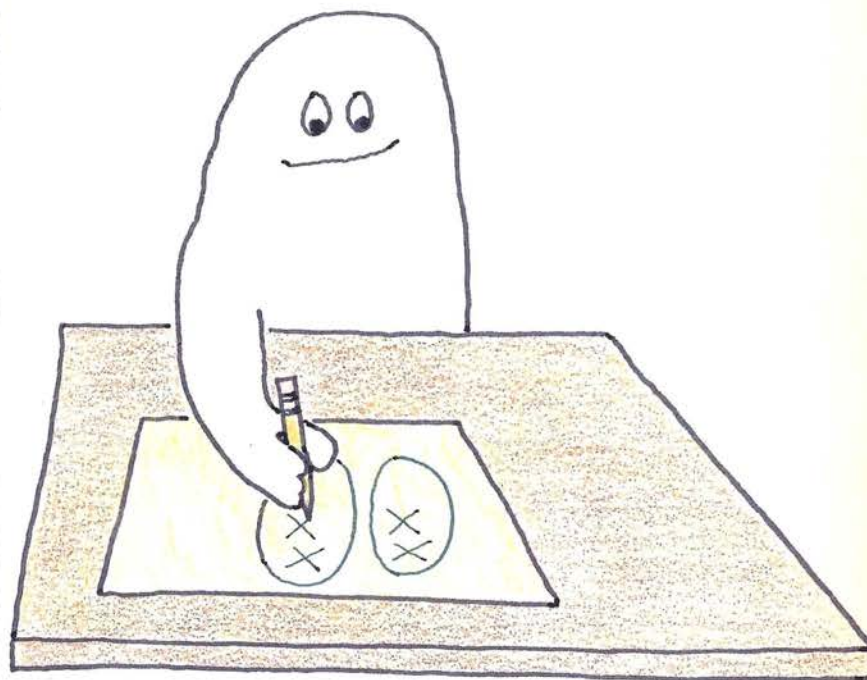
How many X's did you put inside
each ring?

3 FAIR SETS

Draw 3 rings. Then draw 12 marks.
Try to end up with 3 <u>fair</u> sets.

How many marks did you put inside
each ring?

MORE FAIR SETS

Draw 4 rings. Make 12 marks.
Try to end up with fair sets.

How many marks in each ring?

Draw 5 rings. Make 20 marks.
Try to end up with fair sets.

How many marks in each ring?

Draw 6 rings. Make 18 marks.
Try to end up with fair sets.

How many marks in each ring?

LEARN THE CODE

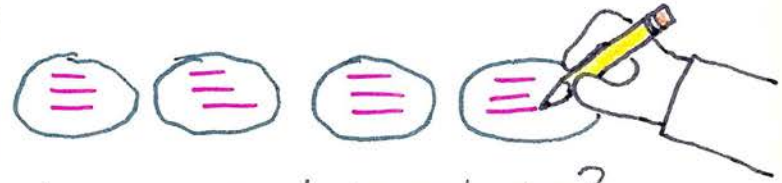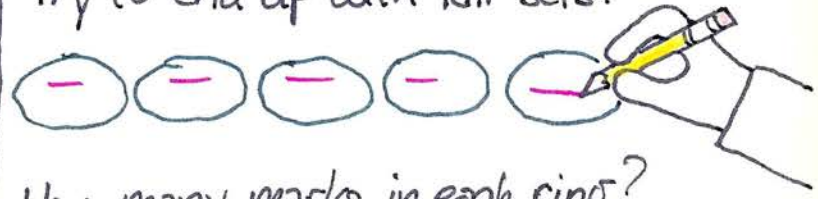Look at each code, then read what it means. Guess what words are under the ear of corn. (But don't do what the words tell you to do — that's what the <u>next</u> page is all about.)

THE CODE: WHAT THE CODE MEANS:

3⟌15   Draw 3 rings.
            Make 15 marks.

2⟌10   Draw 2 rings.
            Make ___ marks.

4⟌20   Dr___ rings.
            M___ marks.

2⟌14   I___ rings.
            M___ marks.

USE THE CODE

Do what each code tells you to do. Try to end up with fair sets. How many marks go inside each ring?

1. 3⟌15   2. 2⟌10

3. 4⟌20   4. 2⟌14

5. 5⟌15   6. 5⟌30

7. 2⟌16   8. 4⟌24

CHAPTER 5
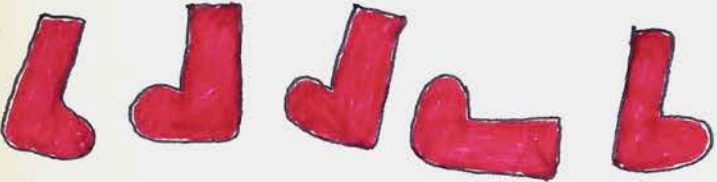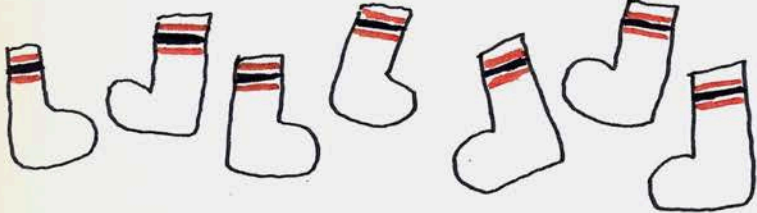
MEASUREMENT DIVISION WITH REMAINDERS

A MANIPULATIVE METHOD
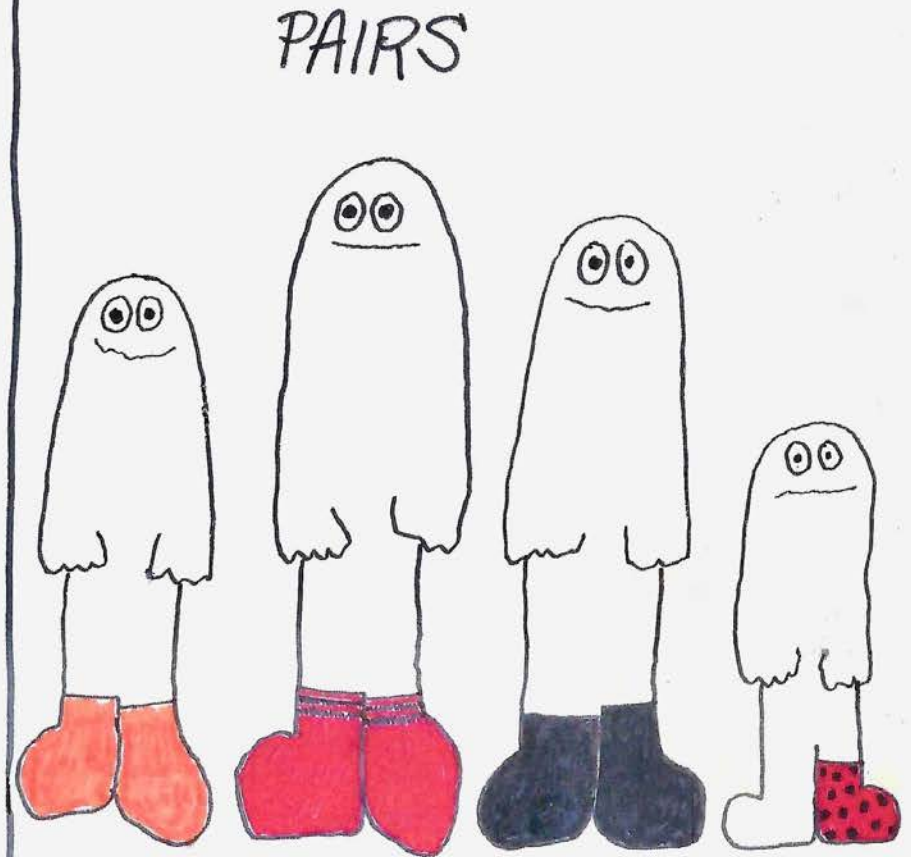
PAIRS

It takes 2 socks to make a pair. How many pairs of socks are in the picture?

MORE SOCKS

How many pairs could you make?
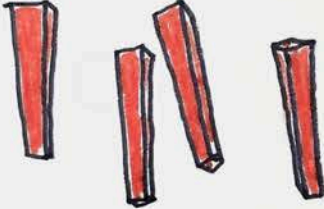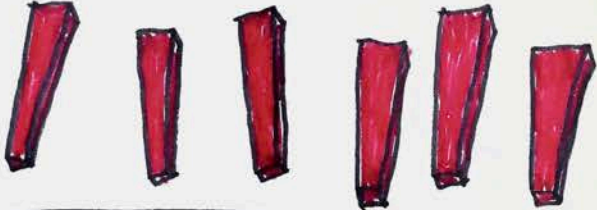
PIANO LEGS

It takes 3 legs to hold up a grand piano.

How many grand pianos could these legs hold up?

LEFTOVERS

Use 13 ostrich eggs (or use slips of paper and pretend). Make as many piles of 4 as you can.
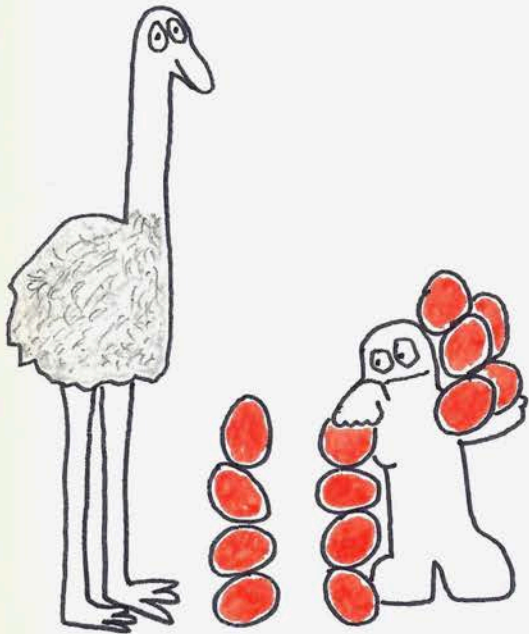
When you finish, how many extra eggs will be left over?

15 SLIPS OF PAPER

Take 15 slips of paper. Make sets of 2:
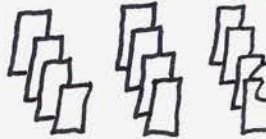
How many sets can you make?
How many slips are left over?

Take 15 slips. Make sets of 3:

How many sets can you make?
How many slips left over?

Take 15 slips. Make sets of 4:

How many sets?
How many slips left over?

LEARN THE CODE

Guess what words belong next to each code. (But don't do what the words tell you to do—that's what the <u>next</u> page is all about.)

THE CODE:	WHAT THE CODE MEANS:
$2\overline{)11}$	Take 11 slips of paper. Make sets of 2.
$3\overline{)11}$	Take 11 slips of paper. Ma
$4\overline{)14}$	
$5\overline{)13}$	
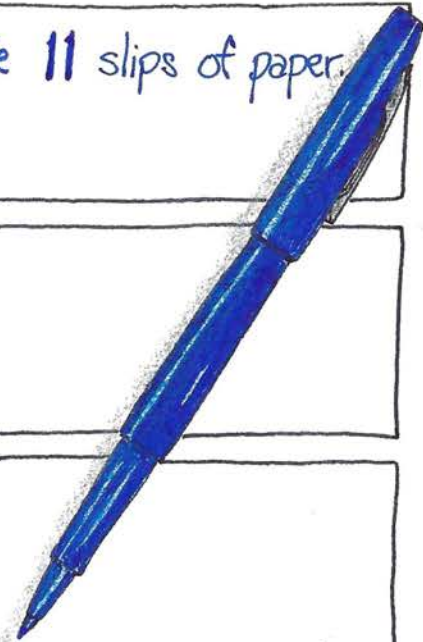
USE THE CODE

Do what each code tells you to do. How many sets can you make? How many slips are left over?

1. $2\overline{)11}$ 2. $3\overline{)11}$

3. $4\overline{)14}$ 4. $5\overline{)13}$

5. $4\overline{)11}$ 6. $2\overline{)9}$

7. $5\overline{)12}$ 8. $6\overline{)13}$

CHAPTER 6

MEASUREMENT DIVISION
WITH REMAINDERS

A PICTORIAL METHOD

LEFTOVER LEGS

First draw 13 legs on a sheet of paper:

|||||||||||||
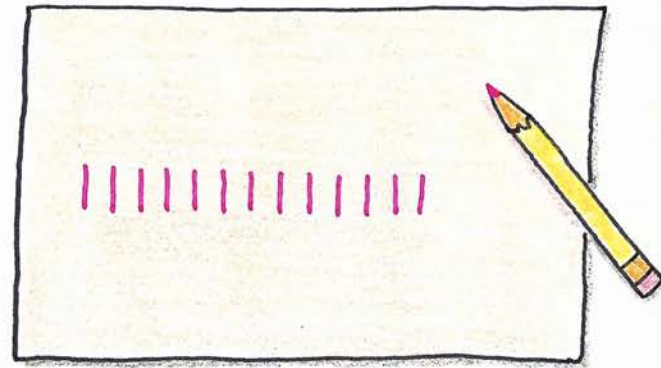
Then start at the left and draw tabletops— make as many 4-legged tables as you can:

⊓⊓ ⊓⊓⊓ ⊓⊓⊓ |
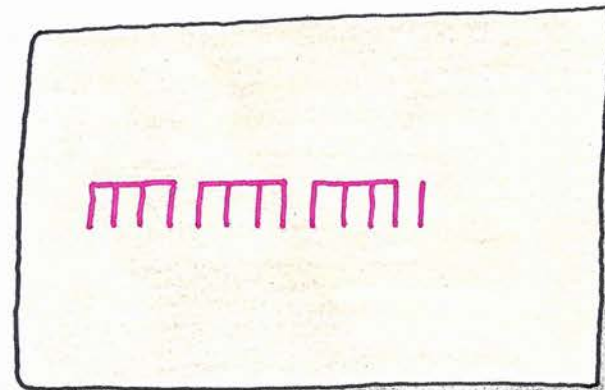
Look at what you did. How many legs got left out?

5-LEGGED TABLES

Draw 12 legs:

| | | | | | | | | | | |
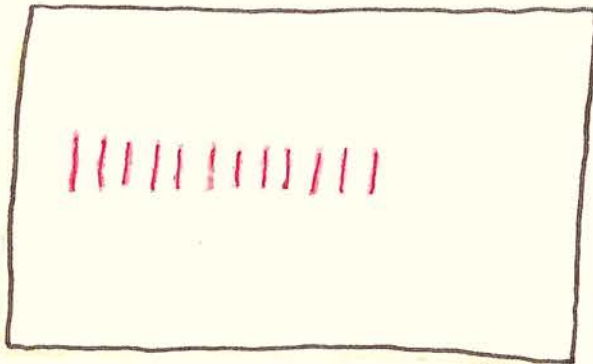
Start at the left.   Make as many 5-legged tables as you can:
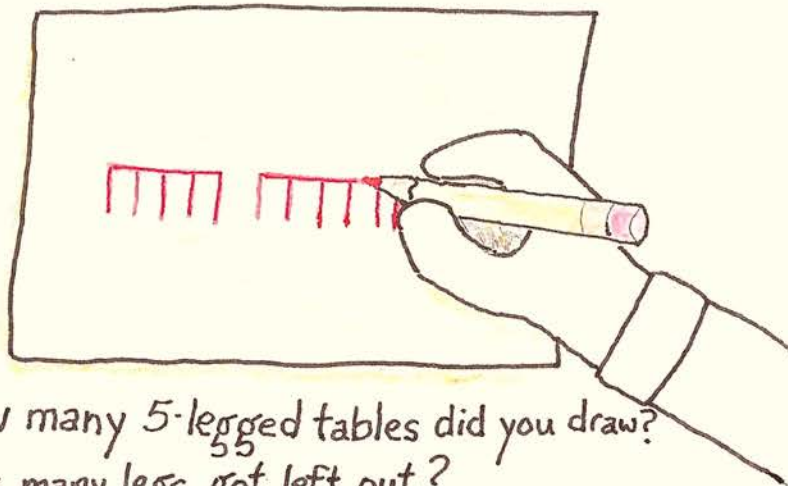
How many 5-legged tables did you draw?
How many legs got left out?

MORE DIVISION TABLES

Draw 11 legs:

| | | | | | | | | | |
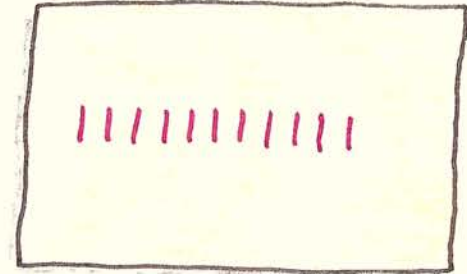
Make as many 3-legged tables as you can.
How many tables can you make?
How many legs are left over?

Draw 7 legs:

| | | | | | |
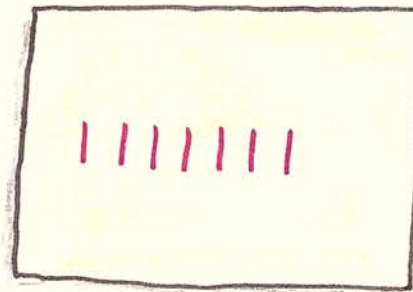
Make as many 2-legged tables as you can.
How many tables can you make?
How many legs are left over?

LEARN THE CODE

Read what the first code means, then try to figure out what the other codes mean. (But don't do what the codes tell you to do — that's what the __next__ page is all about.)

THE CODE: WHAT THE CODE MEANS:

$4\overline{)10}$ Draw 10 legs.
             Make 4-legged tables.

$3\overline{)13}$

$5\overline{)11}$

$4\overline{)9}$

USE THE CODE

Do what each code tells you to do. How many tables can you make? How many legs are left over?

1. $4\overline{)10}$ 2. $3\overline{)13}$

3. $5\overline{)11}$ 4. $4\overline{)9}$

5. $5\overline{)16}$ 6. $2\overline{)13}$

7. $3\overline{)8}$ 8. $5\overline{)17}$

CHAPTER 7

PARTITIVE DIVISION
WITH REMAINDERS

A MANIPULATIVE METHOD

A LOOK IN THE MIRROR
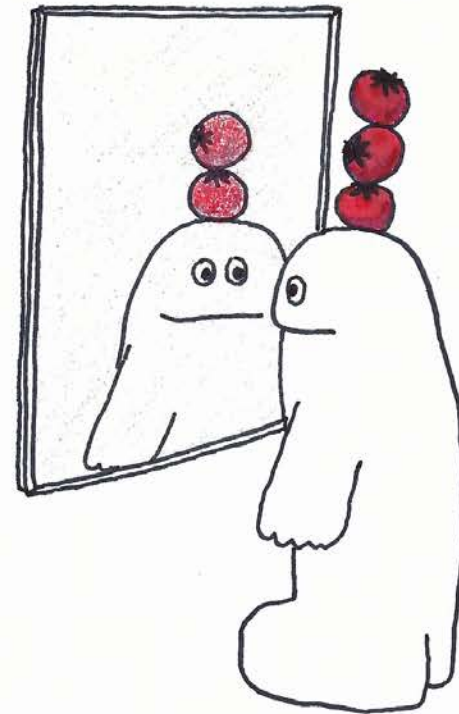
There is something wrong with this picture. If you cover up one tomato, you can make it better. Try it.

MAKE IT FAIR

If you cover up the right banana, you can make this picture fair. Try it.
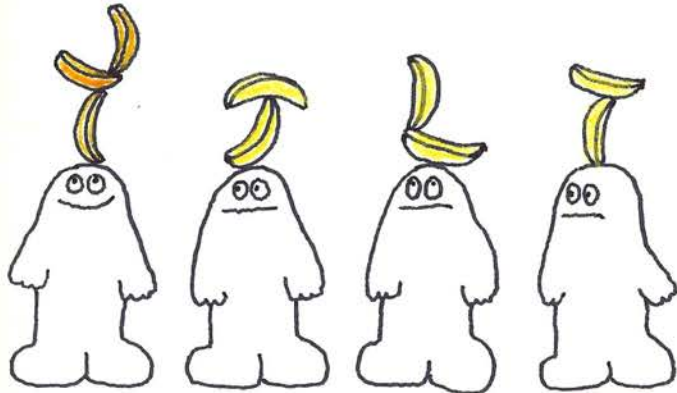
If you cover up the right apples, you can make this picture fair. Try it.

TAKE AWAY

Use slips of paper. Make 2 groups just like these:
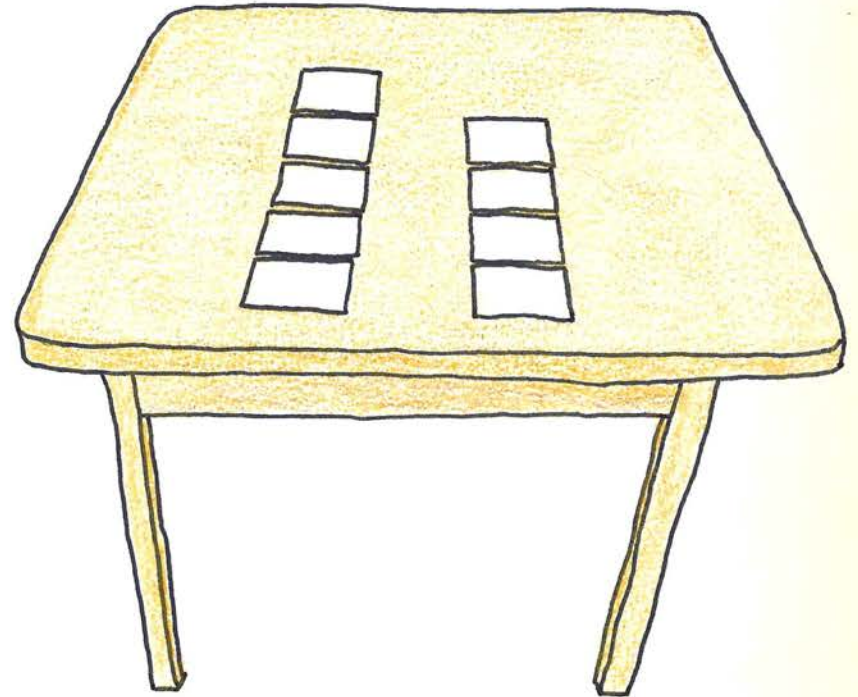
If you take away one slip of paper, you can make these groups fair. Try it.

MAKE TWO FAIR GROUPS

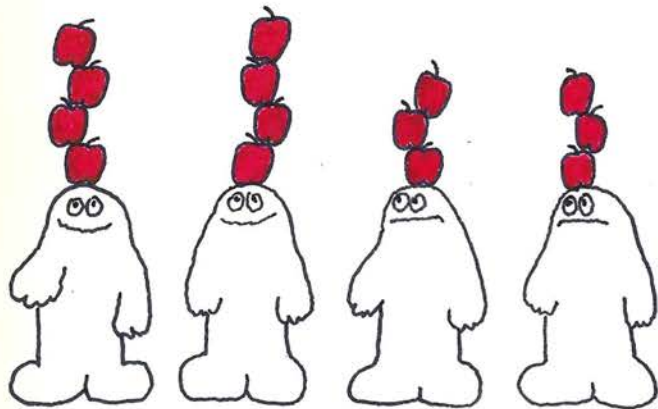Put 7 slips on a table:
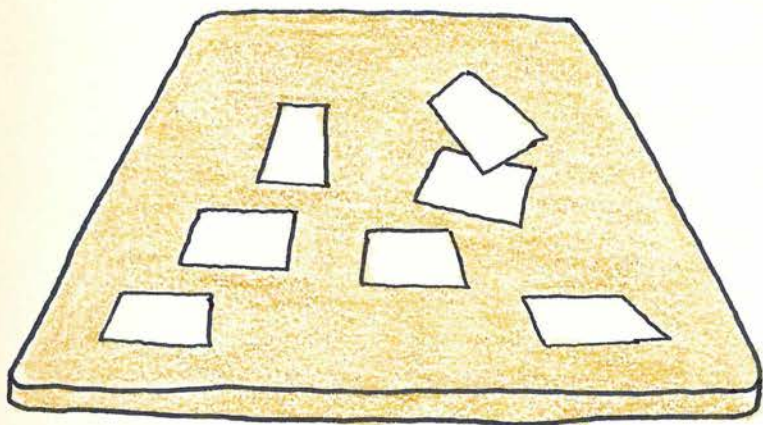
Then try to arrange the slips into 2 fair groups.

HERE'S A HINT: At the end, you may have to take away one of the slips.

THREE FAIR GROUPS

Use 13 slips.
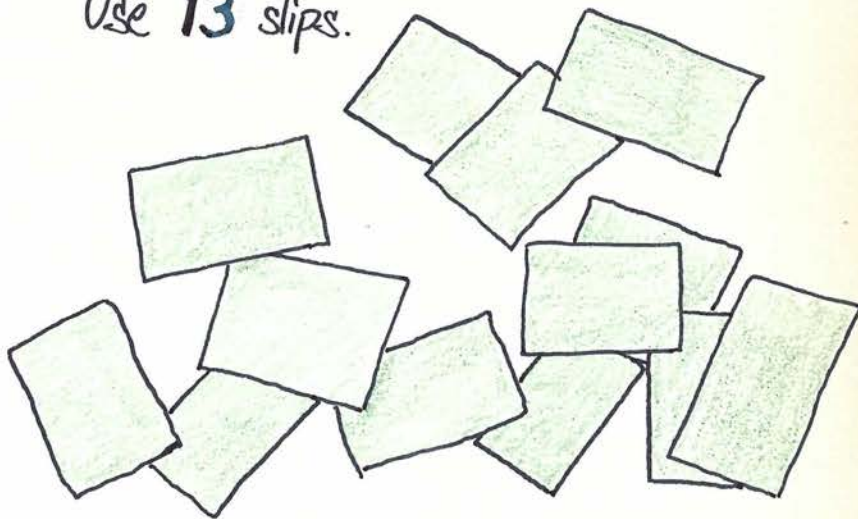
Try to make 3 fair groups.

How many slips end up in each group?

How many slips did you have to take away?

THIS ONE IS A LITTLE BIT HARDER

Use 14 slips. Try to arrange them into 3 fair groups:
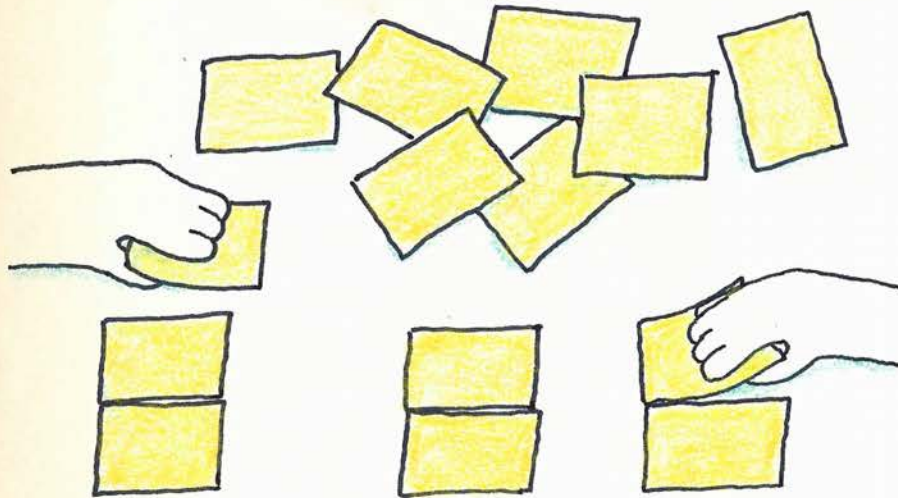
Use as many of the slips as you can.

How many slips end up in each group?
How many slips get left out?

MORE OF THE SAME

Use 14 slips.
Try to make 4 fair groups:

How many slips end up in each group?
How many slips get left out?

Use 18 slips.
Try to make 4 fair groups.

How many slips end up in each group?
How many slips get left out?

LEARN THE CODE

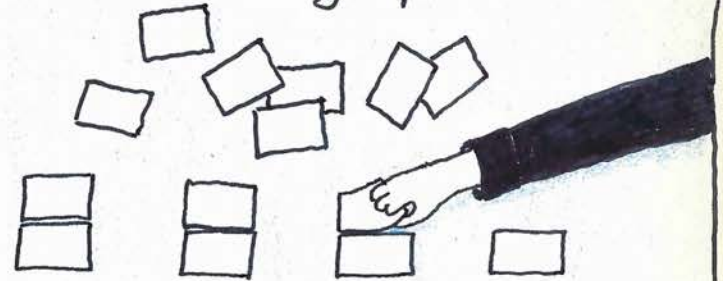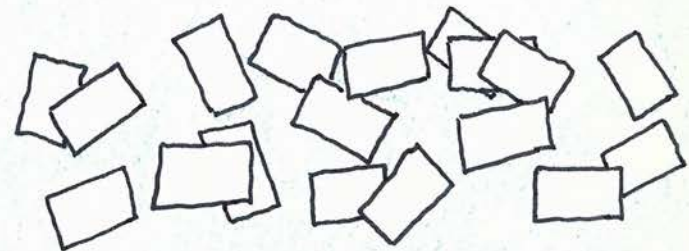Read what the first code means, then try to figure out what the other codes mean. (But don't do what the codes tell you to do — that's what the <u>next</u> page is all about.)

THE CODE:	WHAT THE CODE MEANS:
$2\overline{)13}$	Use 13 slips of paper. Try to make 2 fair groups.
$3\overline{)11}$	
$3\overline{)17}$	
$2\overline{)17}$	

USE THE CODE

Do what the code tells you to do. How many slips end up in each group? How many slips get left out?

1. $2\overline{)13}$ 2. $3\overline{)11}$

3. $3\overline{)17}$ 4. $2\overline{)17}$

5. $4\overline{)13}$ 6. $2\overline{)11}$

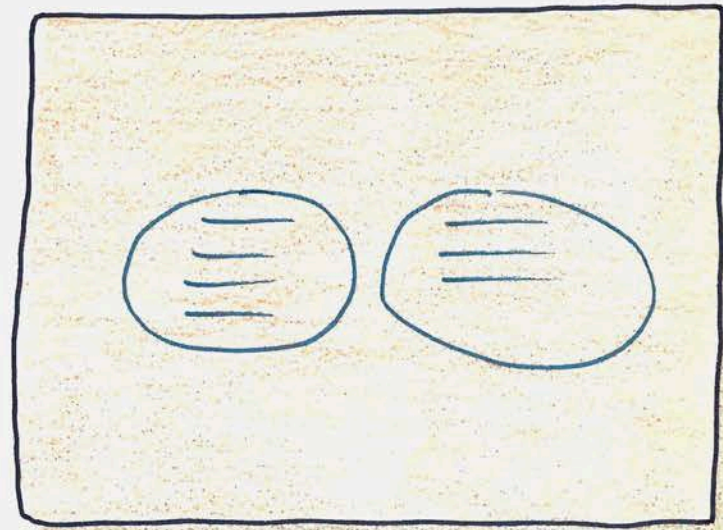7. $3\overline{)16}$ 8. $5\overline{)16}$

CHAPTER 8

PARTITIVE DIVISION
WITH REMAINDERS

A PICTORIAL METHOD

PENCIL AND PAPER
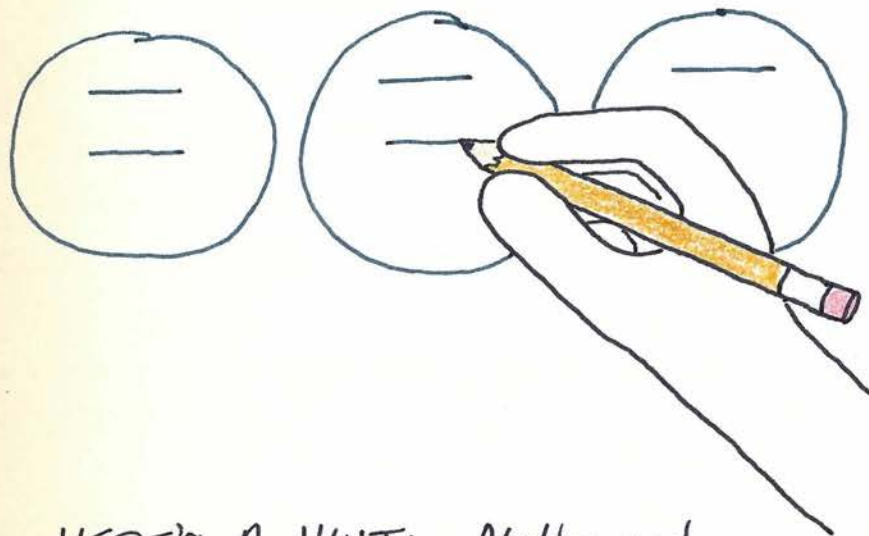
Draw 2 rings. Then make 7 marks just like this:

You can make the sets fair if you cover up one of the marks. Try it.

THREE FAIR SETS
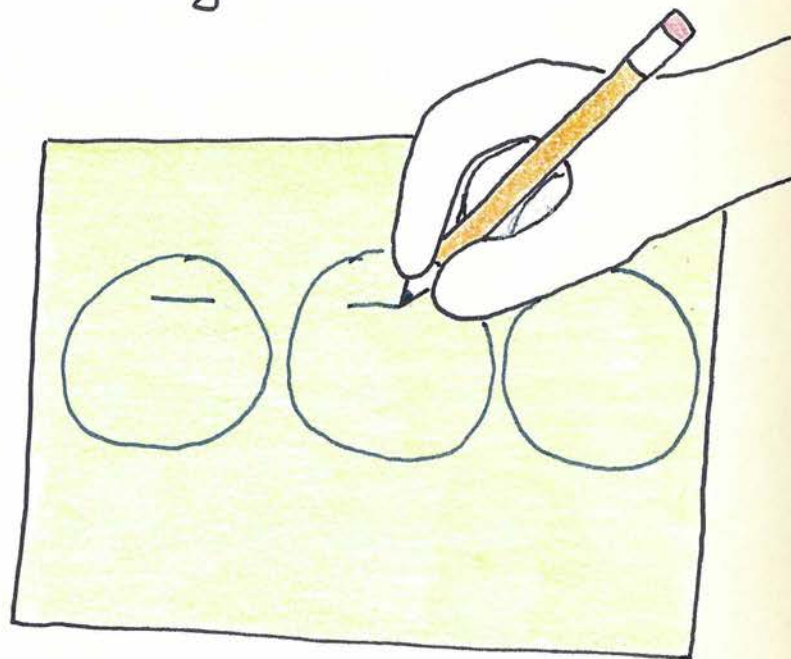
Draw 3 rings.   Make 7 marks.

Try to make the sets look fair.

HERE'S A HINT: At the end,

you may have to cover up one of

the marks.

MORE DRAWING AND COVERING

Draw 3 rings. Make 11 marks.

Cover up marks to make the sets

look fair.   Now how many marks

can you see in each set?   How

many marks did you have to cover?

LEARN THE CODE

Read what the first code means, then try to figure out what the other codes mean. (But don't do what the codes tell you to do — that's what the _next_ page is all about.)

THE CODE: WHAT THE CODE MEANS:

$3\overline{)10}$	Draw 3 rings. Make 10 marks.
$2\overline{)15}$	
$3\overline{)19}$	
$2\overline{)9}$	

DO WHAT THE CODE SAYS

Make the sets fair. How many marks can you see in each set? How many marks did you need to cover?

1. $3\overline{)10}$ 2. $2\overline{)15}$

3. $3\overline{)19}$ 4. $2\overline{)9}$

5. $4\overline{)10}$ 6. $3\overline{)20}$

7. $4\overline{)17}$ 8. $5\overline{)17}$