THE
CHILDS
ARITHMETIC
1/-

THE

CHILD'S ARITHMETIC;

A

Manual of Instruction

FOR

THE NURSERY AND INFANT SCHOOLS.

A NEW EDITION.

Ballyglass

from

Huntsman

Lodge

LONDON:

Wm. S. ORR AND CO., AMEN CORNER,

PATERNOSTER ROW.

MDCCCXLI.

W. S. Glass

Tнɛ object of this little work is to convey, in the simplest and most interesting manner, a knowledge of numbers and arithmetical calculation to children. The style of language and objects presented for computation, have been therefore rendered suitable and attractive to the infant mind. To parents and others on whom the primary education of children is imposed, and also to teachers of Infant Schools, the work, it is hoped, will be found to supply a useful addition to the class of initiatory text books.

In the United States of America, where the work originally appeared, it was eminently successful. In the present edition considerable alterations have been made, to adapt it to the habits and feelings of a British community; and it is now humbly offered as one of the most comprehensive and simple manuals of the kind which has appeared in this country.

London, July, 1839.

THE CHILD'S ARITHMETIC.

FIRST LESSON.

TABLE OF HATS NUMBERED, FOR TEACHING A CHILD HOW TO COUNT, AND ALSO TO TEACH HIM FIGURES, OR NUMBERS.

1		21		41		61		81
2		22		42		62		82
3		23		43		63		83
4		24		44		64		84
5		25		45		65		85
6		26		46		66		86
7		27		47		67		87
8		28		48		68		88
9		29		49		69		89
10		30		50		70		90
11		31		51		71		91
12		32		52		72		92
13		33		53		73		93
14		34		54		74		94
15		35		55		75		95
16		36		56		76		96
17		37		57		77		97
18		38		58		78		98
19		39		59		79		99
20		40		60		80		100

A
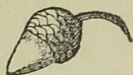
1 Acorn.

2 Acorns.

3 Pipes.
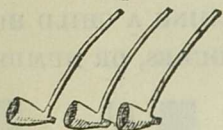
4 Keys.
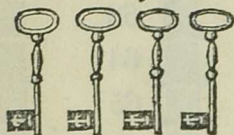
5 Pins.
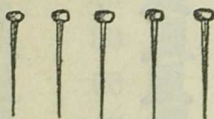
6 Stars.

7 Hats.
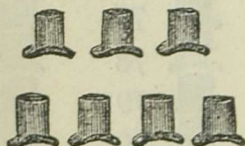
8 Drums.
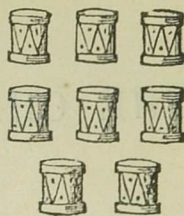
9 Spoons.
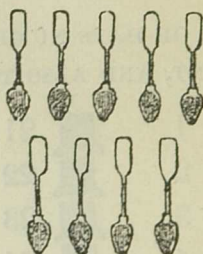
10 Boots.

11 Dots.
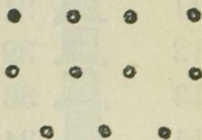
12 Crosses.
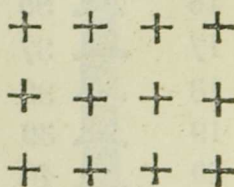
QUESTIONS.

1. How many Acorns are there in the two first pictures?
2. How many Acorns and Pipes are there in the second and third?
3. How many Acorns and Pipes in the first, second, and third pictures?
4. How many Pipes and Keys in the third and fourth pictures?
5. How many Keys and Pins in the fourth and fifth pictures?
6. How many Pins and Stars in the fifth and sixth?
7. How many Stars and Hats? Hats and Drums? Drums and Spoons? Spoons and Boots? Boots and Dots? Dots and Crosses?

SECOND LESSON.

1 Dog.

How many legs has a Dog?

3 Pigs.
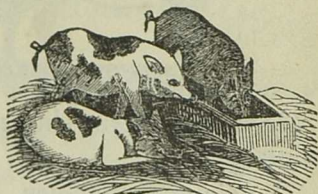
How many legs have 3 Pigs?

2 Cats.

How many legs have 2 Cats?

4 Hens.

How many legs have 4 Hens?

1 Duck.
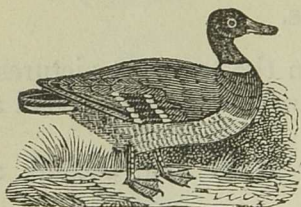
How many wings have 5 Ducks?

9 Guns.

How many ramrods and triggers have 9 Guns?
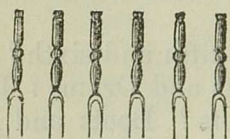
6 Forks.

How many prongs have 6 Forks.

1 Boy.

How many arms have 10 Boys?

1 Donkey, or Ass.
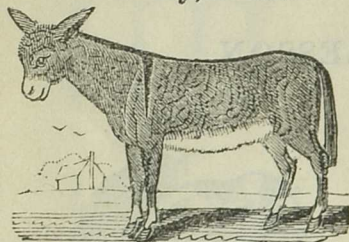
How many ears have 7 Donkeys?

1 pair of Spectacles.
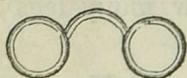
How many glasses have 8 pairs of Spectacles?
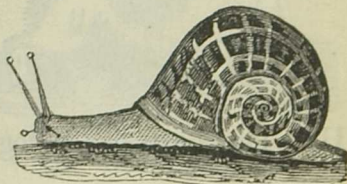
1 Snail.

How many horns have 11 Snails?

1 Rat.

How many eyes have 12 rats?

1 Cocked Hat.   1 Cow.
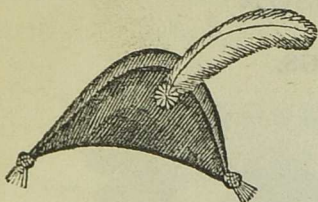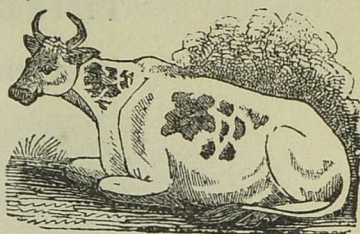
How many corners have   How many legs have 6
3 Cocked Hats?   Cows?
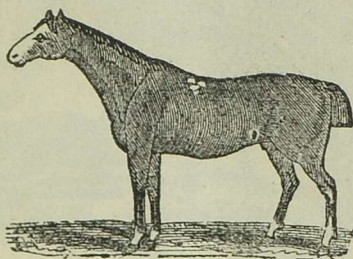
1 Horse.

How many hoofs have 7 Horses?

QUESTIONS.

1. How many legs have 1 Dog and 2 Cats?
2. How many horns have 3 pair of Oxen?
3. How many corners have 4 Cocked Hats?
4. Which have most legs, 6 Cats or 12 Hens?
5. Which have most eyes, 7 Rats or 10 Boys?
6. Which have most ears, 6 Donkeys or 5 Men?
7. Which have most corners, 5 Triangles or 4 Cocked
    Hats?
8. Which have most horns, 10 Cows or 11 Snails?

All these questions should be varied according to the
preceding pictures.

THIRD LESSON

ABOUT DOGS.
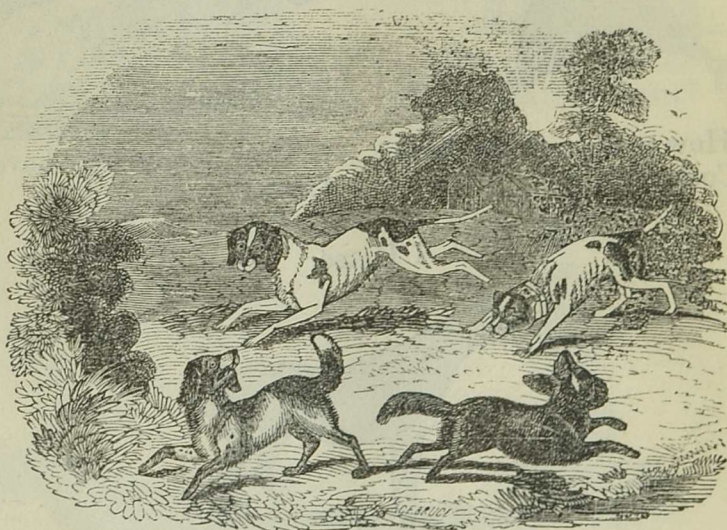
Here is a picture of some dogs. They are playing by the side of some water. They appear to be very happy. I suppose they have just had their dinner, and are now quite contented. I hope they will not quarrel, and bite each other; I hope, also, they will not tumble into the water as they are frisking about.

1. How many legs and ears has 1 dog?
2. How many eyes and ears have 2 dogs?
3. How many ears have 3 dogs?
4. How many legs have 2 dogs?
5. How many have 3 dogs? 4 dogs? 5 dogs?
6. How many eyes have 4 dogs? 6 dogs?
7. How many eyes and noses have 2 dogs? 3 dogs? 4 dogs? 5 dogs?
8. How many legs, eyes, noses, and tails, have 2 dogs? 3 dogs? 4 dogs? 5 dogs?
9. How many legs have 8 dogs? How many legs and noses have 7 dogs?

10. How many legs have 12 dogs ?
11. How many legs and noses have 13 dogs ?
12. How many legs, noses, and tails, have 14 dogs ?

FOURTH LESSON.

ABOUT LIONS.
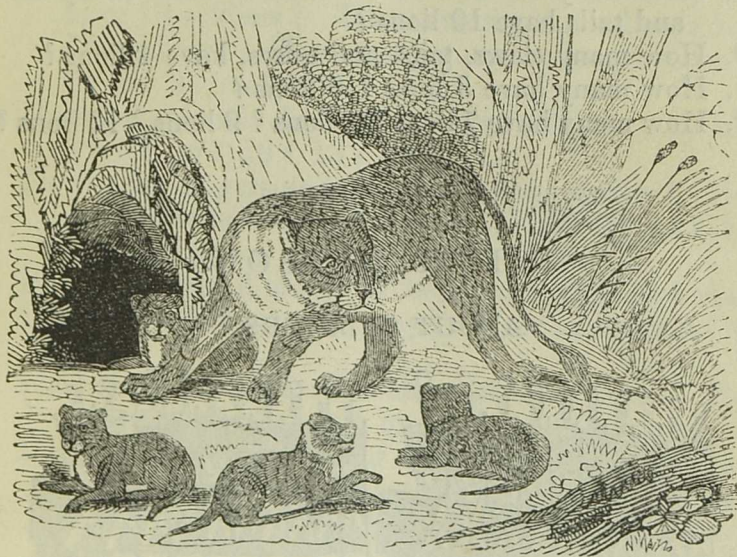
Here is a picture of an old lioness and her 4 cubs. She is as fond of her cubs, as a mother is of her children. She has 5 sharp claws on each foot, and with these she catches animals and tears them to pieces. If any thing comes to harm her little cubs, she springs upon it, sticks her sharp claws into it, and kills it. Lions live in Asia and Africa, and roam about the plains and thickets in search of food. They kill a great many antelopes and wild asses, and sometimes they kill buffaloes and wild oxen.

1. How many claws has a lion on 1 foot? How many on 2? on 3? How many claws has a lion on all his feet?
2. How many feet have 2 lions? 3 lions? 4 lions?
3. How many claws have 2 lions? 3 lions? 4 lions?

4. If a lion had 1 foot cut off, how many claws would he have?
5. How many feet, claws, and tails, have 2 lions?
6. How many feet, claws, tails, noses, heads, and eyes, have 2 lions? 3 lions? 4 lions?
7. How many claws have 4 lions? 5 lions? 10 lions?
8. How many claws have 6 lions? 7 lions? 8 lions? 9 lions?
9. How many claws have 10 lions? How many claws and tails have 10 lions?
10. How many claws, tails, and noses, have 4 lions?
11. How many have 5 lions? 6 lions?
12. How many have 7 lions? 8 lions? 9 lions? 10 lions?

FIFTH LESSON.

ABOUT SOLDIERS.
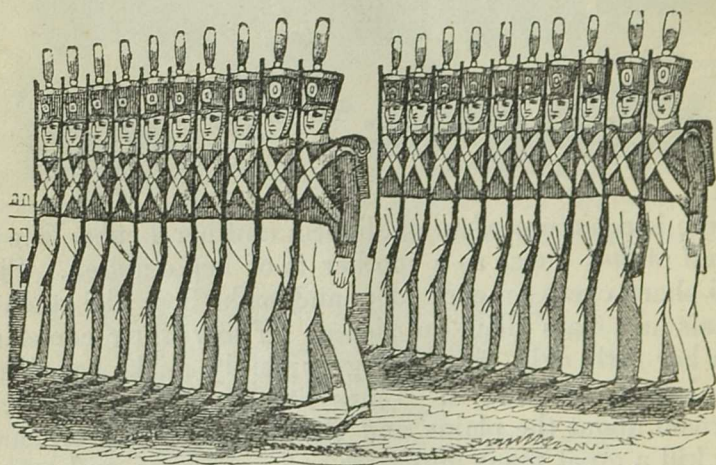
Here is a picture of some soldiers marching about. Each soldier has a cap upon his head, with a feather in it; each one has also a gun. Almost every country has a great number of soldiers in its employment, and, when any quarrel takes place between two countries, they send their soldiers to fight with each other. A great fight between

two bodies of soldiers is called a battle, and in these battles many men are often killed. It is greatly to be desired that nations would cease thus to fight with each other, and rather try to do each other good.   Tell me —

1. How many soldiers are in the picture ?   How many feet have 3 soldiers ?   How many have 4 ? 5 ? 6 ? 7 ? 8 ? 9 ? and so on.

2. How many guns have 12 soldiers ?   How many caps have 13 soldiers ?   How many guns and caps have 13 soldiers ?   How many guns and caps have 6 ? 7 ? 8 ? 9 ? and so on.

3. How many hands have 4 soldiers ?   How many have 6 ? 8 ? 15 ? 18 ? 19 ? 20 ?

4. How many fingers and thumbs has one soldier ?   How many have 2 soldiers ? 4 ? 6 ? 5 ? 8 ? 9 ? 11 ? 13 ? 14 ? and so on.

5. If 1 soldier eat 2 loaves of bread in a day, how many do 4 soldiers eat in a day ?   How many do 5 ? 6 ? 7 ?

6. How many loaves do 2 soldiers eat in 2 days ?   How many do 3 in 3 days ? in 4 ? 5 ? 6 ? and so on.

7. If 1 soldier eat 1 pound of meat in a day, how many pounds do 2 soldiers eat in 2 days ?   How many pounds do 3 soldiers eat in 3 days ? 4 in 4 days ? and so on.

8. If 1 soldier wears out 4 pair of shoes in a year, how many will 2 soldiers wear out in 2 years ? 3 ? 4 ? and so on.

9. If 1 soldier wears out 3 coats in 3 years, how many coats will 3 soldiers wear out in 5 years ? 6 years ? 7 years ? and so on.   How many will 7 soldiers wear out in 2 years ? 3 years ? 4 ? 5 ?

10. If 1 soldier fire 7 bullets in a battle, how many will 2 soldiers fire ? 6 ? 5 ? 9 ? and so on.

11. If 25 soldiers go into battle, and 10 are killed, how many are left ?   If 21 are killed, how many are left ?   If 6 are killed, how many ? 11 ? 13 ? and so on.

SIXTH LESSON.

ABOUT RATS EATING NUTS.
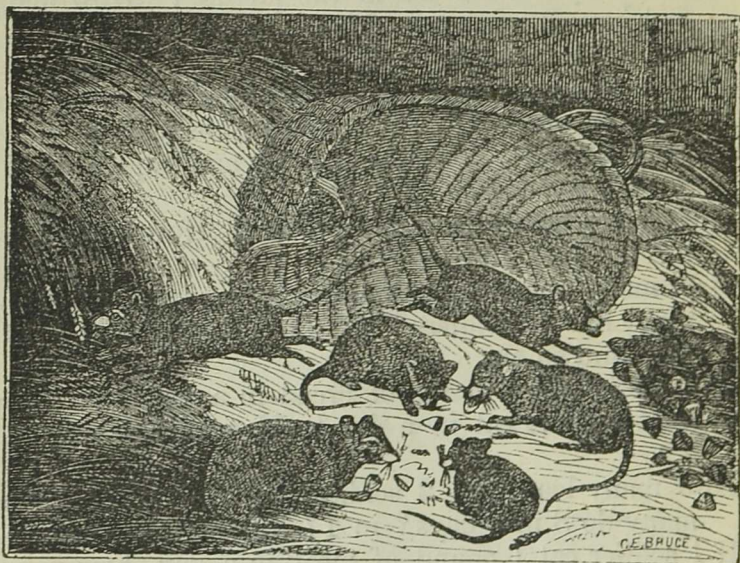
Here are a number of rats eating nuts ; they are almost as fond of this fruit as they are of toasted cheese. They are very sly creatures ; and if you leave walnuts or chestnuts where they can get at them, they will steal them, night by night, until they are all gone.

1. How many legs has a rat ? How many have 2 rats ? 6 rats ? 3 ? 4 ? 5 ? 6 ? and so on.
2. How many eyes have 2 rats ? 6 rats ? 7 ? 8 ? and so on.
3. If 1 rat eat 3 nuts, how many do 4 eat ? 5 ? and so on.
4. If 4 rats eat 4 nuts, how many do 2 eat ? 3 ?
5. If 1 rat steal 4 nuts, another 5, another 7, another 12, another 13, how many do they all steal ?
6. If 2 rats eat 8 nuts, how many does each one eat ? If 3 rats eat 9 nuts, how many does each one eat ?
7. If 7 rats eat 21 nuts, how many does each one eat ?
8. If a rat takes 4 nuts out of a heap of 11 nuts, how many are left ? If he takes 12 nuts out of a heap

of 15, how many are left ?   If he takes 9 out of 18, how many are left ?

9. If 1 cat should catch 3 rats, how many will 3 cats catch ? 4 cats ? 5 ? 6 ? 8 ? and so on.

10. If a cat have 5 kittens, and she gives 2 rats to each kitten, how many does she give them in all ?

11. If a man have 18 rats in his house, and he catch 2 of them in a trap every night for a week, how many rats remain ?

12. If there be 3 houses which have 27 rats altogether, and a cat in each house kills 6, how many are left ?   If a terrier dog kills 3 rats in a day, how many will he kill in a week ?   How many in 4 days ? 8 days ? 2 weeks ? 3 weeks ? 4 weeks ? and so on.

SEVENTH LESSON.

ABOUT CHILDREN PICKING FRUIT.

Here are some children picking and eating fruit.   Some of them are eating peaches, and some are eating grapes. These are delicious, and I think they taste much better

when we can pick them ourselves, and eat them fresh from the tree or the vine. In some countries wine is made of grapes, and the people drink it as freely as we do beer. In France, you may see whole acres covered with vineyards. The grapes are of two kinds, red or purple, and white ; of the former, red wine is generally made ; of the latter, they usually make white wine.

QUESTIONS.

1. If 1 boy eat 3 peaches, how many do 2 eat? How many do 3 eat ? 5 ? 4 ? 8 ? 7 ?

2. If 2 boys eat 3 peaches, how many do 4 boys eat ? 6 boys ? 8 boys ?

3. If 1 boy eat 4 peaches, another 2, and another 7, how many do they all eat ?

4. One little girl had 2 bunches of grapes ; one had 6 grapes upon it, and the other had 9 ; how many on both bunches ?

5. There were 21 peaches divided among 7 boys ; how many had each ?

6. A girl had a bunch containing 14 grapes ; she gave her sister 6 ; how many had she left ?

7. Three boys had 2 peaches each, and 3 girls had 1 each, how many had all these boys and girls ?

8. Three boys had 11 bunches of grapes, of these they gave 7 bunches away, how many had they left ?

9. If a man sell 1 peach for 1 penny, how many pence does he get for 3 peaches ? How many for 5 ? 7 ? If he sells a peach for 2 pence, how much does he get for 3 peaches ? 5 ? 7 ? 9 ? and so on.

10. A boy went to market with 8 bunches of grapes, which he sold for 4 pence a bunch ; how much money did he get in all ? Of this money the boy lost 11 pence and spent 4 ; how much had he left ?

11. If a man sells a bottle of wine for 5 shillings, how many shillings does he get for 11 bottles ? How many for 3 bottles ? 5 bottles ? and so on. If he sells a bottle of wine for 10 shillings, how much does he get for 3 bottles ? 5 bottles ? 7 ? 6 ? 8 ? 9 ? and so on.

EIGHTH LESSON.

ABOUT A CAT AND HER KITTENS.
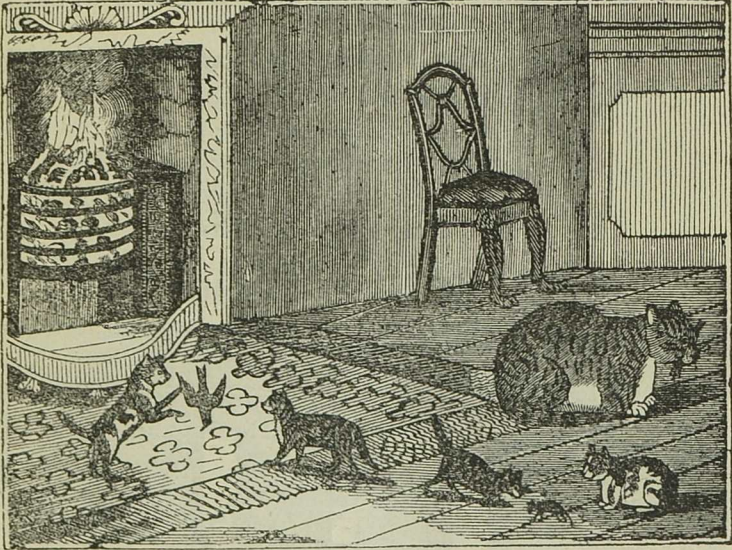
Here is a cat with four kittens. She has been out in the field, where she has caught a bird; this she has brought home and given to her kittens. She has also caught a mouse, and one of the kittens is playing with it. Puss is a sly creature, and she kills a great many little birds and mice. Her foot is so soft that she can walk without noise, and her eye is so formed that she can see when it is nearly dark. When all my little readers are asleep, she steals forth into the meadow or the wood, and wo to the mouse or bird that falls in her way.

QUESTIONS.

1. If a cat divide 4 birds between 2 kittens, how many will each kitten have?
2. If a cat kills 3 birds in a week, how many will she kill in 2 weeks? 3 weeks?
3. If 1 cat kills 5 mice in a week, another 3, another 7, another 4, and another 2, how many do they all kill?

4. If there are 21 mice in a house, and a cat kills 17 of them, how many are left?

5. If there are 18 mice in a barn, of which a weasel kills 7, and a cat 11, how many are left?

6. If 9 cats have killed 18 birds and mice in a week, how many has each killed?

7. If 1 cat kills 4 mice, and another twice as many, how many do they both kill?

NINTH LESSON.

ABOUT THE MINT, AND MONEY.
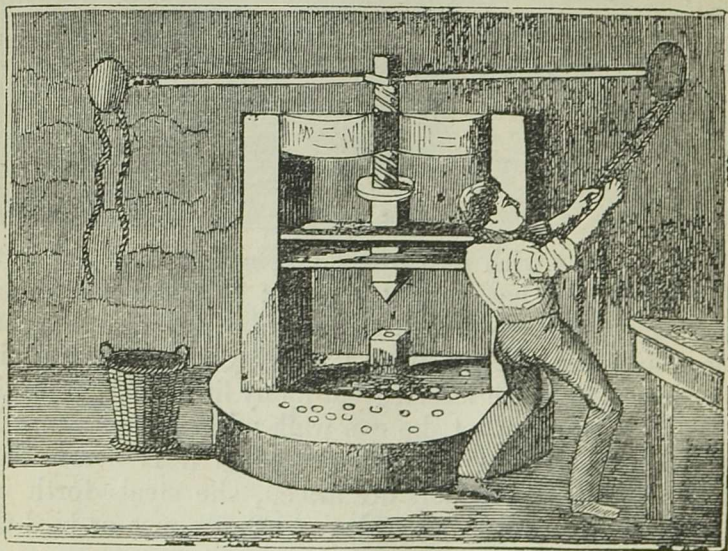
The mint is the place where money is made. Here gold and silver are stamped into little round pieces, which are called sovereigns, half-sovereigns, crowns, half-crowns, shillings, and sixpences. Sovereigns and half-sovereigns are made of gold; crowns, half-crowns, shillings, and sixpences, are made of silver. Pence, halfpence, and farthings, are made of copper. The making of money is called coining.

You must remember that a sixpence is worth 6 copper pennies, or 12 half-pennies; a shilling is worth 12 pennies;

a half-crown is worth 30 pennies, or 2 shillings and 6 pence ; a crown is worth 60 pennies, or 5 shillings ; a half-sovereign is worth 120 pence, or 10 shillings ; and a sovereign is worth 240 pence, or 20 shillings.

QUESTIONS.

1. How many farthings are in a penny ?
2. How many halfpence are in a penny ?
3. How many pence in are sixpence ?
4. How many pence are in a shilling ?
5. How many pence are in half a crown ?
6. How many pence are in a crown ?
7. How many pence are in half a sovereign ? .
8. How many pence are in a sovereign ?
9. How many shillings are in a sovereign ?
10. How many shillings are in half a sovereign ?
11. How many shillings are in a crown ?
12. How many shillings are in half a crown ?
13. How many sixpences are in a shilling ?
14. How many sixpences are in half a crown ?
15. How many sixpences are in a crown ?
16. How many sixpences are in half a sovereign ?
17. How many sixpences are in a sovereign ?
18. If you were sent to change a shilling into copper money ; how many pence ought you to get for it ? How many halfpence ? farthings ?
19. If your hat cost 7 shillings ; how many pence did it cost ?

There was once a little boy called George, who was very obedient to his parents, and was a very good little boy indeed ; his father, to reward him, gave him a penny every week for a whole year, which is 52 weeks. Now, George was a careful boy, and saved all his pennies, which he put into a box ; and at the end of the year, he opened the box and found all his pennies safe. George was so happy that he went to a bookseller's shop and bought a nice little story-book for sixpence. Tell me how much money George had left after he bought his story-book ?

TENTH LESSON.

ABOUT SCALES AND WEIGHING.
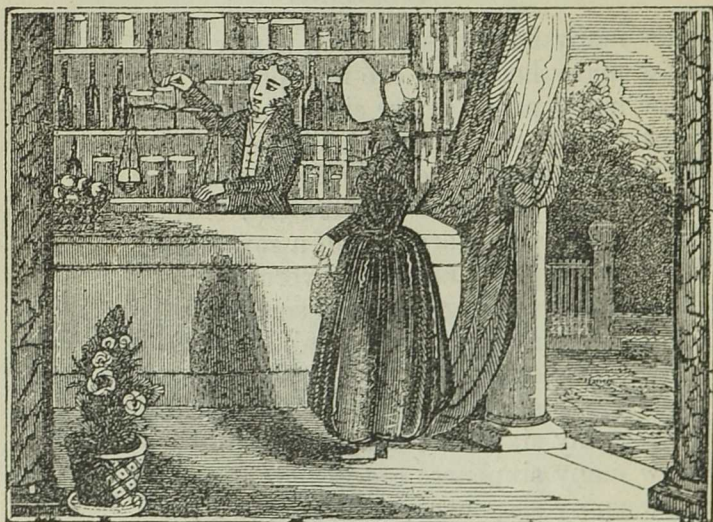
Here is a man using a pair of scales to weigh something that the woman is buying. I suppose you have often seen people weighing sugar, tea, cheese, and other things. The next time you pass the shop your beef and mutton comes from, ask to see the steel-yard, and how it is used. Scales are necessary to render the dealings of people with one another fair and accurate. If, for instance, you wanted to buy a pound of sugar, or four pounds of beef, how could you ascertain the quantity without scales? But in order to use these machines, you must know that 16 ounces make a pound.

The letters lb. form the usual mark for pound-weight, and the letters oz. for ounce-weight.

QUESTIONS.

1. How many lbs. are there in 32 oz. ?
2. How many lbs. in 49 oz. ? 53? 71 ? and so on.
3. How many oz. in 2 lbs. ? in 3 lbs. ? in 4 lbs. ? and so on.

4. A man bought 10 lbs. of sugar; how many ounces were there in the 10 lbs?

5. There were 7 children invited to drink tea at a farm in the country; they eat 1 lb. 8 oz. of honey among them; how much did each child eat?

6. A woman used 6 lbs. of tea in a year; how many ounces did she use in a month?

7. A farmer had 8 children, each of whom eat 6 oz. of bread and 1 oz. of cheese every day for dinner; how many pounds of bread and cheese did they consume in a week? a month? and so on.

8. 12 schoolboys were given a large basket containing 18 lbs. of fine black cherries to divide amongst them; how much fell to the share of each boy?

ELEVENTH LESSON.

ABOUT LIQUID MEASURES.
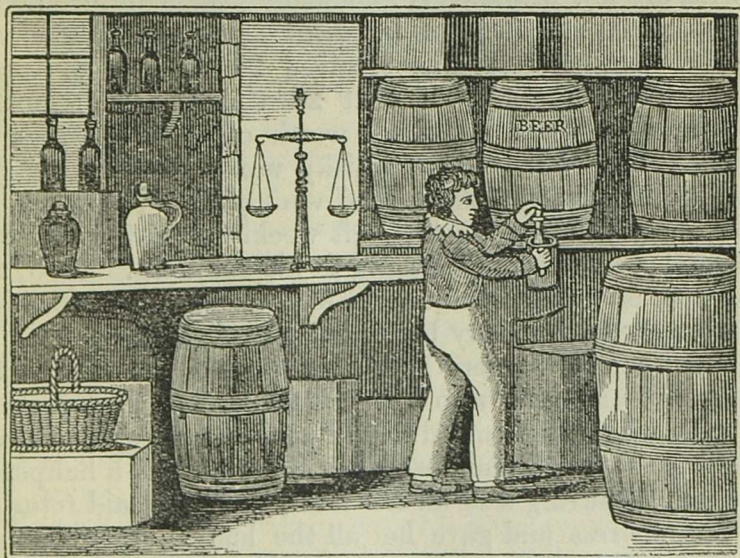
This picture represents a boy drawing beer. Wine, beer, milk, brandy, and other liquors, are measured by gills, pints, quarts, and gallons; thus—

4 gills make 1 pint.
2 pints make 1 quart.
4 quarts make 1 gallon.

QUESTIONS.

1. How many gills are in 1 pint and a half? In a quart?
   2 quarts? 2 quarts and a half? and so on.

2. You drink a pint of milk at breakfast, and another at
   supper, every day; how many quarts of milk do you
   drink in a week? in 2 weeks?

3. How many pints are there in 2 quarts? in 3 quarts?
   in 4 quarts? and so on.

4. How many quarts are there in 64 pints?

5. How many gallons are there in 48 quarts?

6. How many pints are there in 32 gills?

Milk is wholsome and pleasant to drink, and so is tea
and coffee; but brandy, gin, whisky, and other kinds of
spirits, are not wholesome, and many persons injure them-
selves and their families by drinking them. There was
once a working man who received 20 shillings of wages
every week, and out of that 20 shillings he regularly
bought every week 3 shillings worth of whisky, which he
drank. The price of the whisky was 4 pence each gill.
Tell me how many gills he used weekly? and, also, tell me
how many shillings he had left weekly to give to his wife
to purchase food and clothing to his children? Now, tell
me, how many pounds did this foolish man spend during a
whole year on this very bad indulgence in liquor?

A milkmaid was sent by her mistress to sell milk to the
little boys and girls who walk in the park. The quantity
of milk which she carried in her pan was two gallons; and
the price at which she was to sell her milk was a halfpenny
the pint. Having sold all her milk, the milkmaid returned
to her mistress and gave her all the halfpence she had got
for her milk. Tell me how much money she gave her?

TWELFTH LESSON.

ABOUT MONEY.
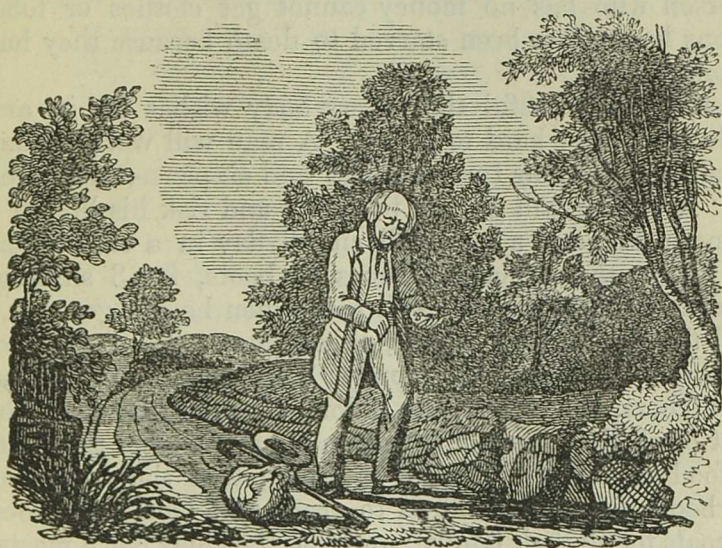
A poor old man wished to go and see his son at a distance. He had no horse nor carriage to convey him, and was therefore obliged to travel on foot. He set out, and though he was very old, I believe past seventy, for his hair was very grey, his face wrinkled, and his body bent, he walked at the rate of two-and-twenty miles a-day. He carried with him some bread and cheese, and a little bacon ; but at length these things were all gone. He then went to a house and asked for food, but the people would give him none, because he had no money to pay for it, and there was nobody he could ask to give him any.

Thus the poor old man was very miserable, for he was very hungry, and could get nothing to eat. Though he was faint and weary, he continued on his journey, and when he was about to fall down from fatigue, he saw a piece of money on the road. He picked it up, and found that it was a crown piece. He was very much rejoiced ; he knew that the people would give him bread and meat for the

money. So he went to a house, and as he could find no one who had lost the crown piece, he did not hesitate to use it.

Thus you see that money is of the greatest use. The food we eat, the clothes we wear, are purchased with money. A person who has no money cannot get clothes or food. Persons have often been starved to death because they had no money.

Money is so useful that every body wishes for it, and people work very hard to get it. A man will work all day for half a crown, or two shillings and sixpence, and often less. A soldier will go out to battle and risk his life for a shilling a-day, and a man will sit all day in a close room, with many others, making shoes or boots, for 3 shillings a-day, and thinks himself well paid when he can get that.

All the people who labour, those who make clothes, or chairs, or tables, work for money. The people in the shops, the butchers, the bakers, the tailors, all want money. The object of all these people is to gain money, so that they may buy food to eat and clothes to wear; that they may buy little books for their children to read, and hats, and shoes, and coats for all their family; and that they may pay a master or mistress for teaching their children to read and write.

QUESTIONS.

1. How many pence did this little book cost? How many pence would buy 2 such books as this? How many would buy 3?

2. If a loaf of bread costs 4 pence, how much do 2 loaves cost? 3? 4? 5? and so on.

3. If 2 loaves cost 1 shilling, how much does 1 loaf cost? 3 loaves? 4? 5? 6? and so on.

4. If 1 hat cost 2 crowns, how much do 3 hats cost? 4 hats? 5? 6? 7? and so on.

5. If 2 pair of shoes cost a dollar, how much do 4 pair cost? 6 pair? 8 pair? and so on.

6. If a man works 2 days for a crown piece, how many days must he work for 10 shillings? 15 shillings? 20 shillings?

7. If a man earns 5 shillings a-day, and spends half of it, how much will he have left at the end of 3 days? 4 days? 5 days? and so on.

8. If a man has 30 shillings, and spends 2 shillings and 6 pence a-day, how long will his money last?

9. How many sticks of sugar-candy, at 2 pence each, can you buy for 18 pence? How many for 16? 20? 22? and so on. If you buy 2 sticks for a penny, how many can you buy for 8 pence? 9? 10? 11? and so on.

10. A man divided 20 pence among his 5 children, how many had each?

11. A man bought the following articles for his son :—A hat which cost 20 shillings, a greatcoat which cost 35, 3 pairs of shoes which cost 7 shillings a-pair, 2 pairs of gloves which cost 5 shillings, and 5 books which cost 10 shillings, how much did all these articles cost?

12. A poor man had saved 20 crowns; 5 were stolen by a thief, 2 he lost, and 11 he spent; how many crowns were left?
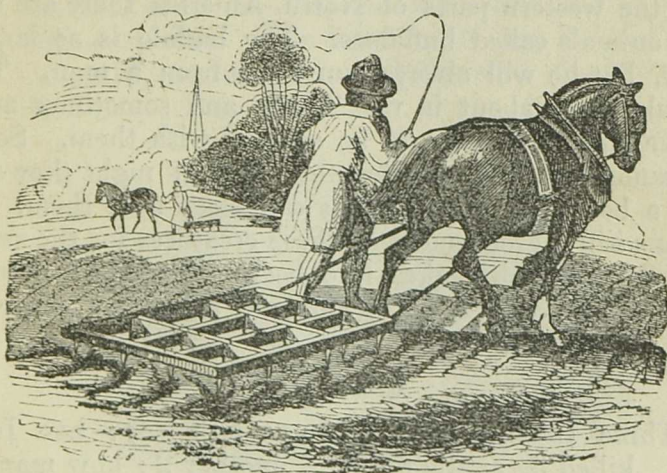
THIRTEENTH LESSON.

ABOUT BUFFALOES.
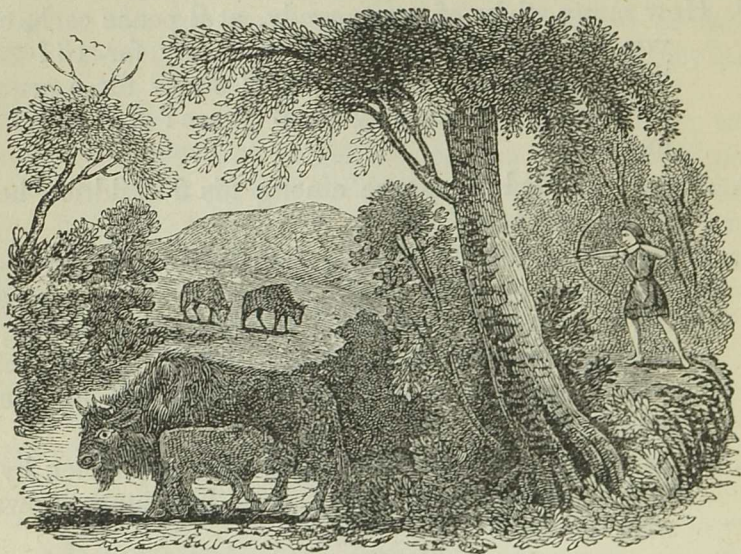
In the western parts of North America there are many large animals called buffaloes. The buffalo is as large as an ox, but he will always run away from a man. These animals roam about in vast herds, and sometimes an extensive plain will seem to be covered with them. Several thousands are often seen together, and at night they make such a bellowing that nobody can sleep near them. The Indians kill a great many of these creatures for the sake of their flesh, which makes fine beef. The white men kill them to get their hides, which are useful for many purposes.

QUESTIONS.

1. Three Indians went to hunt buffaloes; one Indian killed 3, another 7, and another 2; how many did they all kill?
2. Some hunters met with 16 buffaloes, and killed 9 of them, how many escaped?

3. A hunter sold 4 buffalo hides for 12 shillings apiece; how much did he get?

4. If 6 Indians kill 18 buffaloes, how many does each Indian kill?

5. If 6 Indians can live upon a buffalo for 1 month, how many Indians can live for 1 month on 3 buffaloes?

6. A man bought 3 buffalo hides for 10 shillings apiece, and 2 buffalo hides at 6 shillings apiece, how many did he buy, and how much did he pay for all?

7. A party of 8 Indians met with a herd of 20 buffaloes, each Indian killed 2; how many were left?

8. In an extensive plain, or prairie, as it would be called in America, there were many wolves and many buffaloes. In the course of one year 10 wolves killed 40 buffaloes; how many was that for each wolf?

9. If 1 wolf kills 6 buffaloes in a year, how many will 2 kill? 3? 4? 5? and so on.

10. If 1 hunter kills 4 buffaloes in a day, how many will he kill in a week? 2 weeks? 4 weeks? and so on.

11. A party of hunters went far up the Missouri river in North America, till they came to a great plain, where they saw a great many buffaloes. Here they remained for 4 months, and spent their time in killing these animals. The first month they killed 19, the next 17, the next 11, and the next 4; how many did they kill in all?

FOURTEENTH LESSON.

ABOUT A POOR MAN AND HIS FAMILY.

I once knew a man of the name of Berry. He had a wife, and two children named John and Mary. He had a small cottage and a little garden. In this garden he used to raise potatoes, lettuce, cabbages, parsnips, radishes, and se-.veral other things. These vegetables he carried to market and sold them for money. With this money he bought meat and clothes for his family. His children worked with him in the garden, and they raised flowers in earthen pots. These flowers were also sold, and the children used to get a good deal of money by them. I suppose you would like o know more about this gardener and his family: I will therefore tell you something more of his affairs.

QUESTIONS.

1. Mr Berry sold cabbages to one man for 4 shillings, to another for 5 shillings, to another for 3 ; how much did he get for his cabbages ?

2. He sold parsnips to one man for 11 shillings, to another for 7, to another for 5, and to another for 2 ; how much did he get for his parsnips ?

3. He sold 10 bunches of radishes at 3 halfpence a-bunch, 5 bunches at 1 penny a-bunch, and 3 at 2 pence a-bunch ; how many bunches did he sell, and what did he get for them ?

4. He sold his carrots for 12 shillings, his potatoes for 16 shillings, and of this money he paid 15 shillings to the butcher ; how much had he left ?

5. He had a bill with the baker, amounting to 11 shillings for bread. He furnished this baker with vegetables to the amount of 7 shillings ; how much remained due to the baker ?

6. Mr Berry's children, John and Mary, sold 2 rose-bushes for 4 shillings, some daisies for a penny, some carnations for 2 shillings ; out of this money they bought their mother a shawl for the winter, which cost 6 shillings ; how much had they left ?

7. John went to market with 20 heads of lettuce, which he sold for 2 pence apiece, and bought himself a penknife, for which he paid 9 pence ; how many pence had he left ?

8. One night Mr Berry's house took fire. It was soon put out, but it was necessary to employ a carpenter to repair it, and Mr Berry had to pay this carpenter 18 shillings for work, 8 shillings for wood, and 2 shillings for nails ; how much did all this cost ?

9. In one week Mr Berry found the expenses of his family amount to 13 shillings, and he sold vegetables to the amount of 16 ; how much had he left for rent ?

10. This poor gardener owed a rich neighbour 32 shillings for manure for his garden. This he could not pay, and the rich man put him in jail ; and so Mary and John determined to work very hard, that they might get 32 shillings to pay the rich man, and get their poor father out of prison. They accordingly set to work, and earned 4 shillings a-week ; how many weeks did they work to get the 32 shillings they wanted ?

FIFTEENTH LESSON.

ABOUT HENS, CHICKENS, AND OTHER THINGS.
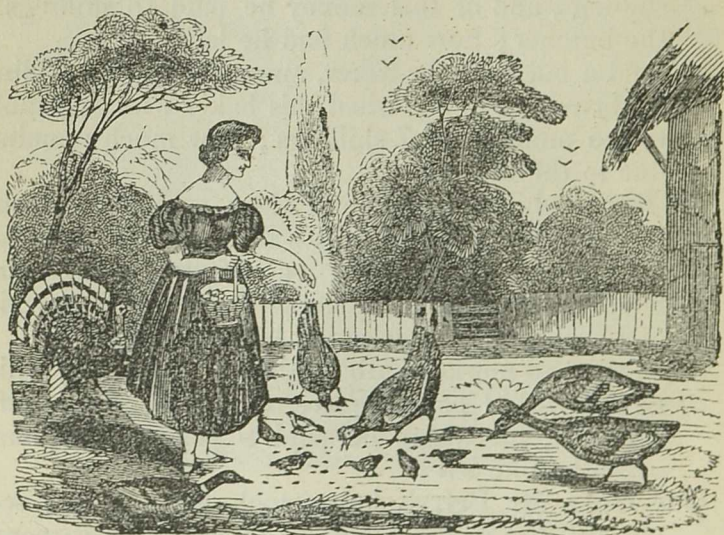
It is common in the country for people to breed a good many hens, ducks, geese, and turkeys. It is a very pleasant occupation to keep these creatures, and many persons get a good deal of money by it. In the spring the hens lay their eggs, and after a while they sit upon them and hatch them. The little chickens are beautiful creatures, and it is very pleasant to see their mother take care of them. She goes about hunting for seeds and worms to feed them with. She scratches among the dirt, and when she finds something, she calls the chickens to come and pick it up. She seems perfectly happy in taking care of her young ones. If a dog, or a naughty boy, comes near her brood, she flies at him fiercely, and drives him away. If a hawk flies over her head, she calls her chickens to a place of safety. At night she gathers them under her wings, and there the little

creatures sleep in peace. Ducks are fond of water, and little ducks, but a day old, will swim, dive, and dabble, as well as the old ones. Geese and goslings behave very much like ducks, but they have a more sober look.

Young turkeys are very pretty, and so are all young birds. Old turkeys are solitary creatures, and seem to be very fond of walking about in the fields in search of crickets and grass-hoppers. The cock turkeys are great cowards, and will run away at sight of a cat ; but they are fond of strutting about, and gobble as loudly as if they were afraid of nothing.

Fowls are raised by the farmers, on account of their eggs, and for the sake of their flesh. The eggs of hens are the best, and will sell for 1 shilling a-dozen. Sometimes in winter they bring 2 shillings a-dozen, because then they are scarce. A hen will sell for 3 shillings, a goose for 5 shillings, and a turkey for 7 shillings, and sometimes for 10. Ducks will sell for 5 shillings a-pair.

QUESTIONS.

1. A man had 3 hens ; one laid 4 eggs in a week, another laid 3, another 2, another 5 ; how many did they all lay ?

2. The next week these hens laid the same number of eggs ; how many did they lay in 2 weeks.

3. A man had several hens who laid 17 eggs in a day, but at night a weasel carried off 5 of them ; how many eggs were left ?

4. An old woman had 19 ducks, a fox killed 4 of them ; how many had she left ?

5. The same old woman, another year, had 14 turkeys ; but 4 died in the winter, a fox carried off 3, she ate 2, and sold 1 ; how many had she left ?

6. A farmer had 7 hens who laid 7 eggs in a week ; how many eggs in all ?

7. A boy had 3 old ducks who hatched each 8 young ones ; how many young ones in all ?

8. My grandmother had 5 turkeys ; 3 of them laid 9 eggs each, and the rest 7 eggs each ; how many did they all lay ?

9. A man had 4 children and 16 chickens; he divided them equally among the children; how many did each child get?

10. A girl sold 4 eggs for 8 pence; how much did she get for each egg?

11. A woman sold 3 hens for 9 shillings; how much did she get for each?

12. A weasel went into a barn where he found 3 nests; one had 7 eggs, another 8, and another 3; from each nest he sucked 2 eggs. Now, tell me, how many eggs were in the 3 nests? How many eggs the weasel ate? And how many eggs were left when he had finished his supper?

SIXTEENTH LESSON.

MORE ABOUT THE POULTRY-YARD.
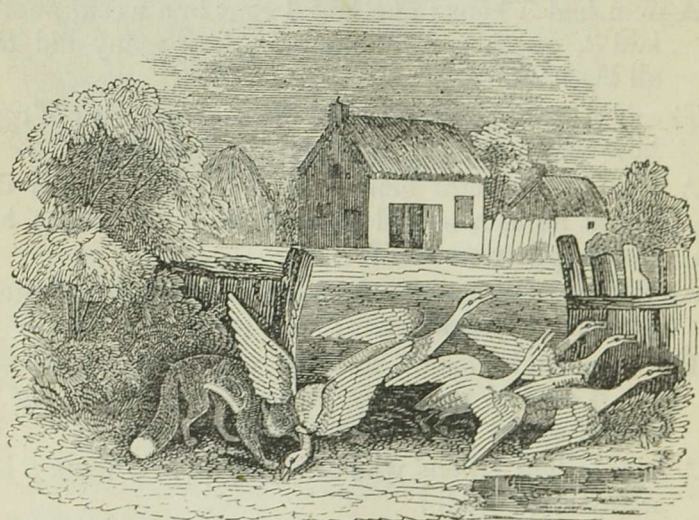
QUESTIONS.

1. A farmer had a flock of 37 geese; a fox killed 2 every night for a week; how many did the fox kill? How many geese were left?

2. A poor old woman had 7 hens, which had 12 chickens each, and which she hoped to sell for enough to buy her a new cloak and bonnet ; but a weasel killed 14 of them, and a fox devoured 21 ; how many had she left ?

3. The same old woman went to market once with 78 eggs in a basket ; she tumbled off her horse and broke half of them ; the rest she sold at 1 penny apiece ; how much money did she bring home ?

4. There were 7 people who lived in a little row of houses on the common ; they kept amongst them a flock of 56 geese, which grazed upon the common ; how many geese had each person ?

5. A little boy, whose name was Johnny Black, had been given 6 hens by his godmother on his birth-day ; 5 of them had soon 8 chickens each, and 1 had 13 ; the rats killed 17, and 9 died of the pip ; how many had Johnny Black left ?

6. A man had 2 turkeys, 4 ducks, 1 goose, and 21 eggs ; he sold the turkeys for 9 shillings, the ducks for 3 shillings and 6 pence each, the goose for 6 shillings, and the eggs for 1 penny each ; how much money did he get in all ?

7. There were 4 weasels in farmer Hall's yard, who killed 21 chickens, 11 little ducks, 7 goslings, and 19 turkey poults during last summer; how many did each kill ?

8. Susan Williams went to market with 19 hens, which she sold for 3 shillings each. She bought a bonnet for 4 shillings, a pink ribbon for 2 shillings, and a little book for 6 pence. How much money did she get ? How much money did she pay ? How much had she left ?

9. Jenny Brown had 14 hens, half of whom laid 9 eggs each, and the other half 72 eggs altogether. Nanny Green, who lived next door to her, had 9 hens which laid 14 eggs each, and 3 which laid 7 eggs each ; how many eggs in all ?

SEVENTEENTH LESSON.

GOING TO BUY TOYS FOR CHRISTMAS PRESENTS.

Little boys and girls are fond of toys, which are to be bought in shops. Many toys come from Tunbridge in England, where great numbers of people live by making them. When little boys and girls are good, their fathers and mothers are apt to go and buy some toys for them. They should not break or spoil their toys, but take care of them, so that they may serve for a long while. Here is a lady who has taken her son and daughter to a shop to give them Christmas presents. The girl is looking at a doll, and the boy at a gun. How pleased they appear to be! I suppose they have been good children.

QUESTIONS.

1. The lady bought a doll for the little girl, which cost 2 shillings, and a pin-cushion, a needle-book, and a

thimble, which cost 5 shillings more. For the boy she bought a gun, which cost 3 shillings, a drum which cost 1 shilling, and a hoop which cost 1 shilling ; how much did she lay out for the two children ?

2. Sam Green went to a toy-shop with 18 pence in his pocket ; he bought a top for 3 pence, a whistle for 6 pence, and a ball for 2 pence ; how much had he left ?

3. Sally, his sister, who went with him, took with her 36 pence, or 3 shillings ; she bought a doll for her little sister Jane, which cost 9 pence ; a pin-cushion for Emily, which cost 6 pence ; a basket for Mary, which cost 8 pence ; and on her way home, she bought a cap ribbon for old nurse, which cost 10 pence ; how much did she spend ? and how much had she left ?

4. If a woman has 7 children, and spends 7 pence for each of them at the toy-shop ; how much will she spend for the whole ?

5. Several children went to a bazaar in the Christmas holidays, and bought a wooden horse for 18 pence, a cat for 9 pence, a cow for the same, a barking-dog for 6 pence ; how much did they pay for all these things ?

6. A man had 6 children ; for one he bought the story of Little Jack, which cost 4 pence ; for another Cinderella, which cost 2 pence ; for another Tom Thumb, which cost 2 pence also ; and for the other 3 he bought 3 pictures of cats, kittens, puppy-dogs, and horses, at 4 pence each ; how much did the man spend ?

7. If a boy has 45 marbles, and gives away 16 of them ; how many has he left ?

8. If he is given 29 cherries, and eats 6, and gives away 9 ; how many has he left ?

EIGHTEENTH LESSON.

ABOUT A POOR WOMAN AND HER HONEY.
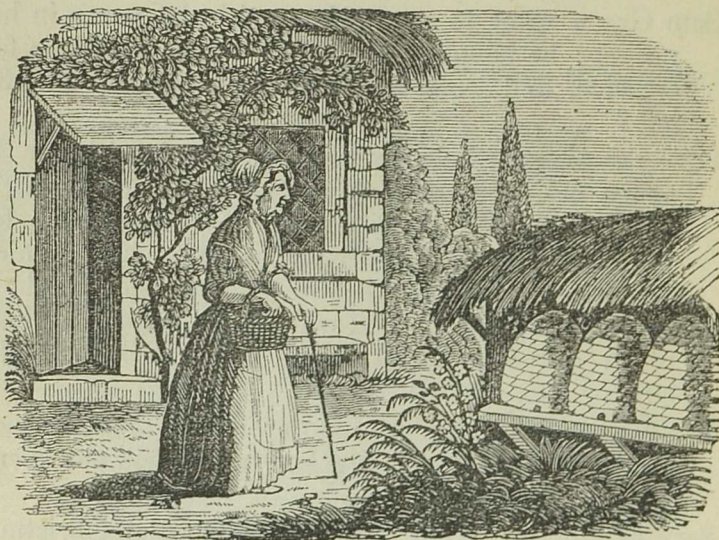
Here is a picture of a poor old woman and several bee-hives. She lives in a little brown cottage, and being too old and too feeble to work herself, she has got a great many bees who work for her. In the winter these little creatures get into their hives, and go to sleep. But when the warm weather comes, and the blossoms are open, then the bees fly abroad in search of food. As soon as the sun is up, they come crawling out of their hives, and then spreading their pretty wings, scatter themselves over the fields and meadows in search of food. One settles upon a buttercup, another upon a lily, and another upon a daisy. From these and many other flowers they collect honey; they fly from one flower to another, till they have got as much as they can carry. They then hurry home to the hive, where they store the honey away in a very careful manner. Then they set off again, and thus spend the day in robbing the beautiful flowers of their sweets.

By the time the winter is come, the hives are filled with

honey. Then the old woman takes it away, and carries it to market, and there she sells it for a good deal of money. With this money she buys bread, and meat, and shoes, and stockings, and other such articles as she wants. Thus you see this poor woman lives very comfortably upon the labour of her bees.

QUESTIONS.

1. If 20 bees make 4 ounces of honey, how many ounces will 40 make ?
2. If 24 bees have made 2 ounces of honey, how many bees has it taken to make 1 ounce.
3. If one hive yields 25 pounds of honey, how many pounds will 2 hives yield ?
4. The poor woman sold her honey at 1 shilling a-pound ; 1 hive gave her 25 pounds, another 20 pounds, and another 15 pounds ; how much did she get for the whole ?
5. She sold honey to a grocer at various times for £11, and bought groceries ; that is, sugar, tea, cheese, butter, snuff, salt, pepper, and such things, to the amount of £7; how much had the grocer to pay her ?
6. The best hive this poor old woman ever had produced 28 pounds of honey. She took it out and put it into a vessel to keep it safe till the next market-day. The vessel was overturned by the cat, and 13 pounds of honey was spoiled by falling on the sanded floor ; how many pounds had she left ?
7. One day that she wanted candles, she went and sold a pound of honey for 10 pence, and she bought 6 candles at 1 penny each ; how much had she left ?
8. She fell sick, and living alone in her little cottage, she had to get a nurse, to whom she paid 5 shillings ; the doctor's bill came to 18 shillings, and 6 shillings for coals ; what did her expenses come to ?
9. If this poor old woman has to pay £4 a-year for rent, £27 for food and clothing ; how many bee-hives, producing £2 each, must she have to pay these expenses ?

NINETEENTH LESSON.

ABOUT MILK, BUTTER, AND CHEESE.
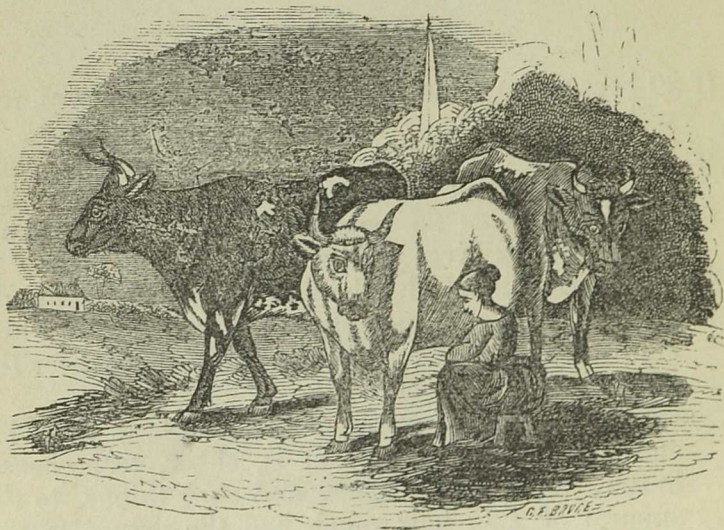
Here is a picture of a woman milking a cow. Some cows give as much as 14 or 16 quarts of milk in a day. Milk is very useful to put into tea and coffee, and to mix with eggs and flour to make puddings. It is also very good for children, and there are few little people who are not fond of bread and milk for breakfast and supper. Butter and cheese are also made of milk ; and in the country, farmers keep a great many cows for this purpose. Milk is sold for 3 or 4 pence a-quart ; butter brings 14 or 15 pence a-pound, and cheese about 7 pence.

QUESTIONS.

1. A poor woman had a cow which gave 8 quarts of milk ; she used 1 quart for her children, and sold the rest at 4 pence a-quart ; how much did she get ?
2. If we buy 2 quarts of milk per day at 3 pence a-quart, how much shall we spend in a week ? in 2 ? in 3 ? and so on.

3. If a man sells 10 quarts of milk a-day at 4 pence a-quart, how much does he get in 2 days? 3? 4? 5? and so on.

4. If 4 children drink 2 quarts of milk a-day, how much will they drink in a week?

5. If a family uses 2 pounds of butter every day, how much will they use in 1 week? 2 weeks? 3? 4? and so on.

6. If a cheese weighs 11 pounds, how much could you sell it for at 7 pence a-pound?

7. Old Jenny Dodds sold 5 pounds of butter at 15 pence a-pound, and bought 4 pounds of brown sugar at 6 pence a-pound, how many pence had she left?

8. If a family spends 6 shillings a-week for milk, how much will they spend in 2 weeks? 3? 4? and so on. How much do they spend in a year?

9. If 2 cows produce as much milk in a summer as sells for £5, and as much butter as comes to £4, and as much cheese as comes to £2, what is the whole amount gained? If their keep for that time costs £4, what is the profit made by their owner?

10. If a man spends £2 a-month in butter, how much does his butter cost him for 6 months? 8 months? a year? and so on.

TWENTIETH LESSON.

ABOUT HALVES, THIRDS, AND QUARTERS.

 Here is the picture of an apple cut into 2 equal parts, or halves.

Here is an apple cut into 3 equal parts, or thirds.
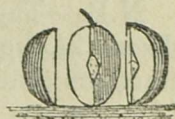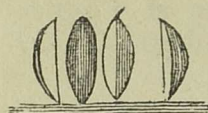
 Here is an apple cut into 4 equal parts, or quarters, or fourths.

I will now tell you about halves, quarters, and so on. It is very necessary to understand these things, for they are often spoken of. Suppose a man has 2 children, and but 1 apple, but the man cuts it into 2 pieces, and gives 1 to each. Each of the children, therefore, gets half an apple.

But suppose the man has 3 children, and but 1 apple; he then cuts it into 3 pieces, and gives each a third part. If he has 4 children, and but 1 apple, he cuts it into 4 pieces, and gives each one-fourth part, or a quarter. You will understand that $\frac{1}{2}$ signifies one-half; $\frac{1}{3}$ signifies one-third; $\frac{1}{4}$ signifies one-fourth; $\frac{2}{4}$ signifies two-fourths; and $\frac{3}{4}$ signifies three-fourths.

QUESTIONS.

1. How many halves of an apple make a whole apple ?
2. How many halves make 2 whole ones ? 3 whole ones ? 4 whole ones ? and so on.
3. How many thirds in 1 whole apple ? in 2 whole apples ? in 3 ? in 4 ? and so on.
4. How many fourths or quarters in 1 whole apple ? in 2 whole apples ? and so on.
5. If you cut a stick into thirds, how many pieces will it make ?
6. If you cut it into quarters, how many pieces will it make ?
7. How many halfpence in 1 whole penny.
8. If you divide 5 apples among 10 of your schoolfellows, how much must you give to each ?

N.B.—The teacher may extend these questions, or, if he deems fit, he may proceed to inform his pupils about other fractions than those in the lesson.

TWENTY-FIRST LESSON.

ABOUT TRAVELLING.
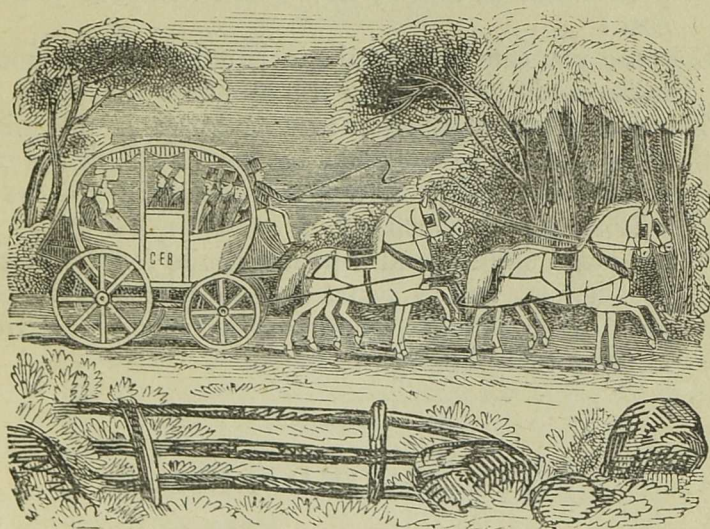
Here are some people travelling in a nicely covered coach. Nothing is more agreeable than to travel about, if the roads are good and the country pleasant. I suppose my little pupils would be glad to travel about, and see the different towns and cities, not only in our own country, but in other countries. But before you set out upon your journey, you must calculate the distance you are going, the time that will be required, and the expense of the expedition. I am now going to tell you about distances, and then you can calculate how far you can go in a day, and how much money is necessary for a journey. You must first remember that 12 inches make 1 foot, 3 feet make 1 yard, 1760 yards make 1 mile.

QUESTIONS.

1. How many inches in 2 feet ? 3 ? and so on.
2. How many feet in 36 inches ? 48 ? and so on.
3. How many feet in 1 mile ?
4. How many feet in $1\frac{1}{2}$ miles ? 2 miles ? and so on.

5. If you have a journey of 99 miles to go in 4 days, how many miles must you travel each day?

6. Suppose you have to go a journey of 100 miles; your coach fare is 6 pence each mile, and your other expenses half as much; how much will your journey cost?

7. Suppose you can walk 1 mile in 15 minutes, how many miles could you walk in 8 hours?

8. The distance from London to Edinburgh is 400 miles. If you make the journey on horseback, at the rate of 30 miles a-day, how many days will you be in performing the journey?

9. If you pay 1 shilling and 6 pence a-mile for the hire of post-horses, and 3 pence a-mile to the postilions, how much would it cost you to travel post from London to Edinburgh?

TWENTY-SECOND LESSON.

ABOUT A FARMER AND HIS CATTLE.
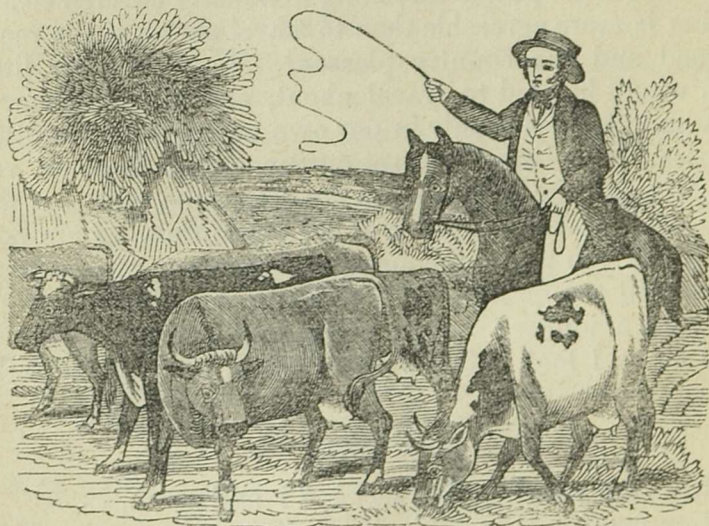
Here is the picture of a man driving some cattle. He is a farmer, and has bred these cattle upon his farm. During

the summer, the cattle live by eating grass in the pastures. In the winter, when snow is on the ground, the cattle are fed with hay, or some other food fit for them. When the cattle are fat, the farmer drives them to market for sale.

QUESTIONS.

1. A farmer drove 10 fat cattle to Smithfield, and sold 1 for 12 guineas, another for 13, another for 15, and the remainder for 10 each; how much did he receive for all ?

2. A man drove 4 fat oxen from Leicester to Liverpool, where he received 36 guineas for 2, and 31 for the other 2; he spent 5 guineas on the road; how much did he clear ?

3. A poor man had a cow which he wanted to fatten for market. As he had no land, he was obliged to pay £2 for pasturage, 10 shillings for bran, 10 shillings for potatoes, £1 for corn, and when he took her to market, he only sold her for £10 ; how much had the poor man left after paying the expenses of fattening his cow ?

4. A man sent 11 pigs to market, for which he received 10 shillings apiece; what did he get for the whole drove ?

5. Three men bought 30 pigs, for which they paid 12 shillings apiece ; what did all the 30 pigs cost ? and what was each man's share of the price ?

6. Two men bought a fat ox, for which they paid £15 ; they then paid a butcher 5 shillings for killing it. They divided the meat between them in such a manner, that one took one-third, and the other two-thirds, and they paid the cost of killing the beast in the same proportion ; how much did each man pay ?

7. A farmer had 10 pigs, which he fattened and sold for 20 shillings apiece; the fattening cost 5 shillings each pig ; how much did he make by the sale ?

8. A farmer had 36 calves ; a bull-dog got into the field and worried them, 15 were found dead ; how many were left alive ?

TWENTY-THIRD LESSON.

ABOUT SHEEP.
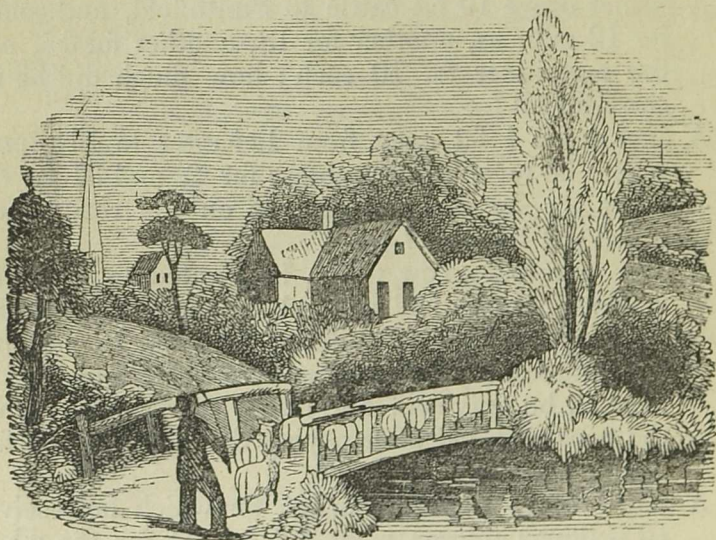
This is the picture of a man driving his sheep to market. Sheep do best in mountainous countries, and they will often get fat where other animals would starve. Among the mountains of Scotland and Wales, and upon the downs of Sussex, there are many sheep. It appears to me that men must be very happy who devote themselves to the rearing of these animals. They are gentle, innocent creatures, and easily become fond of those who take care of them. The rearing of little lambs in spring is a most delightful occupation. No creature on earth is happier than the lamb seems to be, when the weather gets warm, and he is able to go out with his mother upon the green hill-side.

But sheep are not only interesting animals, they are very useful also. From their wool, our winter clothing is made; and their flesh, which is called mutton, is very good to be eaten. How happy it is for us that we are provided so bountifully with this excellent food.

QUESTIONS.

1. A man drove 3 score of sheep to market, and sold 35 of them ; how many had he to drive back ?

2. A farmer sent 13 sheep to be sold, for which he received £4 apiece, and 9 lambs, for which he received £1 apiece ; how much did he get for the whole ?

3. A farmer had 25 sheep, which produced 100 pounds of wool ; half of this he sold for 1 shilling a-pound ; how many pounds did he sell ?   How much did he get for it ?

4. A man hired pasture for 80 sheep, and paid at the rate of 3 shillings a-sheep ; how much did he pay for the whole ?

5. A man who had 3 sons, gave 25 sheep among them ; they sold the sheep for £3 apiece, and divided the money between them ; how much did each get ?

6. A farmer had a flock of 120 sheep, including the lambs ; 7 were killed by the wolves, 2 lambs were killed by a fox, and 4 were killed by dogs ; how many remained ?

7. A farmer had 87 sheep, but during a hard winter 19 of them died, and 4 were killed by dogs ; how many remained ?

8. A man divided 16 sheep equally between his 4 sons ; the eldest sold his for £3 apiece, the second sold his for £2 apiece, and the two youngest sold theirs for £4 apiece ; how much did they all get ?

9. A farmer had 20 sheep ; out of the wool of each his wife spun 2 hanks of worsted ; out of each hank of worsted she knitted 2 pairs of stockings ; how many hanks of worsted had she, and how many pairs of stockings did she knit ?

TWENTY-FOURTH LESSON.

ABOUT PICKING UP APPLES.

Here are a farmer and his 3 sons gathering apples. Of some of these apples, they are going to make cider; the rest they will keep to make pies and puddings of in the winter; put up in barrels, they will keep quite fresh till the spring, and be sent to a great distance. In very hot countries they have no apples, but the people there have oranges, figs, pine-apples, and other fruits instead.

QUESTIONS.

1. A boy carried 24 fine large apples for his mother to market; he sold them 3 for a-penny; how much money did he bring home to her?
2. A farmer sold 100 bushels of apples for 10 pounds; how much were they a-bushel?
3. A woman bought half a dozen apples one day at a stall, and divided them among her 4 children: how much had each child?

4. A rich man, who had a beautiful orchard, told a poor woman that she might have all the apples upon one of his trees. The woman picked the apples with the help of her son, and sold them for 6 shillings a-bushel, there being 5 bushels in all; how much did she get?

5. Twenty-four apples were equally divided among 18 boys and girls; how much did each get?

6. A woman had a present of apples made to her. She made 10 apples into a pie; she used 6 for apple-sauce, 5 she ate raw, 7 she roasted, and 13 proved to be rotten; how many had she altogether?

7. A company of boys were set to pick apples for making cider, and they tried which should gather most in 6 hours. One gathered 60 dozen, another 25 dozen, another 44 dozen, another 15 dozen; how many were gathered altogether?

TWENTY-FIFTH LESSON.

ABOUT GATHERING NUTS.

Here are some boys and girls gathering nuts. I know of nothing more pleasant for children than to gather hazel-

nuts, chestnuts, and walnuts, in the woods. These fruits are ripe in the autumn, and when the strong winds have shaken the trees, the ground is sometimes almost covered with them. The squirrels are then very busy in laying up their winter store ; and the people are busy also in collecting the nuts, either for their own use, or for the purpose of sending them to market.

QUESTIONS.

1. Four children went into the woods to gather nuts, and they collected 11 quarts ; how much was that for each ?

2. A boy collected 5 bushels of walnuts in 10 days ; how much did he gather in a day ? He sold them for 3 shillings a-bushel ; how much did he get for the whole ?

3. A woman was walking through a wood, where she found a great many chestnuts blown down by the wind ; she picked up 78, and brought them home to divide among her 3 children ; how many did each child get ?

4. A man had 14 quarts of chestnuts in a store-room. The rats got at them, and ate 5 quarts and a half ; he ate 4 quarts and a half himself, and gave away the rest ; how much did he give ?

5. A boy went to market to sell 3 bushels of walnuts which he had gathered off the tree in his father's little garden. He sold them for 5 shillings a-bushel ; out of the sum he got he bought a hat which cost him 4 shillings and 6 pence, a knife which cost a shilling, and a sickle which cost 6 shillings ; how much had he left ?

6. The fruit-woman at the corner of the street bought walnuts to the amount of 4 shillings, chestnuts to the amount of 6 shillings, and filberts to the amount of 7 shillings, all of which she sold to little boys and girls for twice as much as she gave for them ; how much did she gain ?

7. There was a large dish of roasted chestnuts to be divided equally among 7 children; they all got 21 apiece; how many were there in the dish?

TWENTY-SIXTH LESSON.

ABOUT SQUIRRELS.
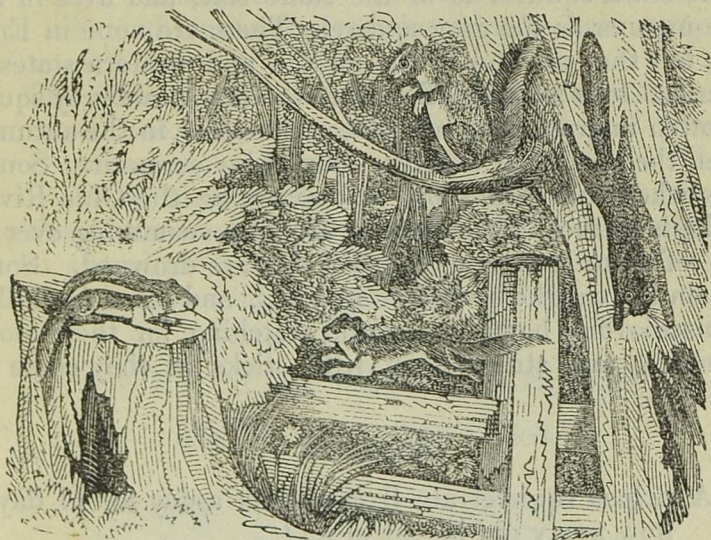
Here are some squirrels. They are happy, merry little creatures, and they leap about from bough to bough as if they were birds. The striped squirrel is the smallest. He sits on the stumps, and seldom climbs trees. He is a native of America. He makes his nest in the ground, and is very cunning in its contrivance, so as to render it comfortable and safe. In the autumn he fills it with nuts, so that he may be well provided with food in the winter.

The red squirrel is running along the fence. He is the most nimble of all squirrels. He is a saucy fellow, and when he is on a tree, he will often chatter at a dog or boy that happens to be going by, in the most impudent manner. The red squirrel is smaller than the grey, but he is said to drive all the grey squirrels out of the woods where he lives. He is a handsome little fellow, and if you put him in a cage, he will sometimes jump and caper for an hour together.

The grey squirrel is seldom found in England, but he abounds in northern countries. He lives among the lofty trees of the American and Russian forests, and builds a nest of sticks at the top of them. He is particularly fond of walnuts, and nothing can be so graceful as he is on the top of a tall walnut-tree, leaping from branch to branch, and seeming as safe as if he had wings.

The black squirrel is of the same size, and lives in the same manner as the grey squirrel. There are none in England, but they abound in the middle and western states of America. It is a curious fact, that the black and grey squirrels often migrate from one place to another in the autumn. When they come to a river, they swim across it. Sometimes when the steam-boat is descending the Ohio River, hundreds of these little animals are seen swimming over it. Some of them become exhausted, and are drowned. Some of them are caught by people in boats, and some are killed by mischievous boys, who stand watching for them along the shore, and strike them with sticks as they come to land.

QUESTIONS.

1. A striped squirrel ate 3 chestnuts a-day for 11 days; how many did he eat in all?

2. A red squirrel ate 32 hazel-nuts in 8 days; how many did he eat each day?

3. A grey squirrel had 4 young ones, each of which ate 4 filberts a-day; the old one ate as much as all the young ones together; how many filberts did they all eat in one day? 2 days? 3 days? and so on.

4. Four striped squirrels carried into their holes 7 chestnuts a-day for a week; how many did they carry in altogether? How many did each squirrel carry in?

5. Two black squirrels had 3 young ones; the young ones ate one chestnut every day, and the old ones twice as many as all the young ones; how many chestnuts did all these squirrels eat in a day? in 2 days? 3 days? 4 days? and so on.

6. There were 5 squirrels who had 45 walnuts; how many fell to the share of each squirrel?

7. There were 11 squirrels scrambling about 1 walnut-tree ; after they were tired of their gambols, they felt hungry ; 5 of them ate 2 walnuts apiece, and the rest ate 3 apiece ; how many did they all eat ?

8. There were 16 red squirrels who had altogether 40 walnuts ; how many was that for each squirrel ?

9. An old squirrel with 3 young ones had 34 chestnuts ; half of them she ate herself, and the other half she divided among the young squirrels ; how many had each ?

10. Two Indians were travelling in the winter, and having no food, they dug into the ground, and found a striped squirrel's nest with 23 walnuts, 41 filberts, and 27 chestnuts ; how many did they get in all ?

11. There was a walnut-tree which had 100 nuts upon it ; a squirrel picked 5 nuts every day till they were gone ; how many days did they last ?

TWENTY-SEVENTH LESSON.

ABOUT HAY AND CORN.

Here is a picture of farmers getting in their hay. This is a very important part of a farmer's business, for without

hay, his cattle, his horses, and his sheep, would perish during the long frosty winter. Some farmers do not keep cattle enough to consume their hay, and they therefore sell it. Hay is usually sold by the ton. A cart-load of hay will generally weigh a ton.

It is very pleasant to see the people making hay. In the morning, in the beautiful month of June, the mowers go into the fields and cut down the fine long grass. It is then spread out in the sun, and when it is dry, it is raked into heaps called cocks, and carried on carts into the farm-yard, to be packed into stacks. Hay-making is performed by men, women, and boys.

The raising of grain, such as wheat, rye, oats, and barley, is another very important part of a farmer's business. Wheat is mostly used for making bread. Rye in some places is mixed with wheat. Barley is purchased by the brewers to make malt, which is barley prepared in a certain manner, and from the water in which malt has been steeped, beer, ale, and porter, are made. Oats are used to feed horses; but when ground into meal, are useful also as food for human beings. Oatmeal porridge is much used by young people in Scotland.

QUESTIONS.

1. A farmer had 7 horses, which devoured 10 loads and a half of hay in the course of the winter; how much was that for each horse?

2. A man sold 5 loads of hay at £3 a-load, having paid 6 shillings a-load for carrying it to market; how much money did he clear?

3. If one load of hay contains 36 trusses, how many trusses will be contained in 5 loads?

4. A farmer fattened 5 pigs, to which he gave 22 bushels and a half of corn; how many bushels did each pig consume?

5. A farmer had 10 cows, which, during the winter, ate 12 tons of hay, which cost £3 a-ton, and turnips and oil-cake to the amount of £5 more; how much did the keeping of each cow cost?

6. A man had a horse which ate half a bushel of oats
   a-day for 3 weeks ; the oats cost 3 shillings and
   6 pence a-bushel; how much did all he eat cost ?
7. A farmer sold hay which came to £18, wheat for £12,
   oats for £10, and other sorts of grain for £15 ; half
   of all these sums he expended in coats, hats, shoes,
   sugar, salt, and other things ; how much had he left ?
8. A farmer bought 3 pigs, for which he gave 20 shillings
   apiece ; he paid £2 for barley-meal to fatten them,
   and sold them again for 30 shillings each; how
   much did he gain on each pig ?

TWENTY-EIGHTH LESSON.

ABOUT POTATOES.
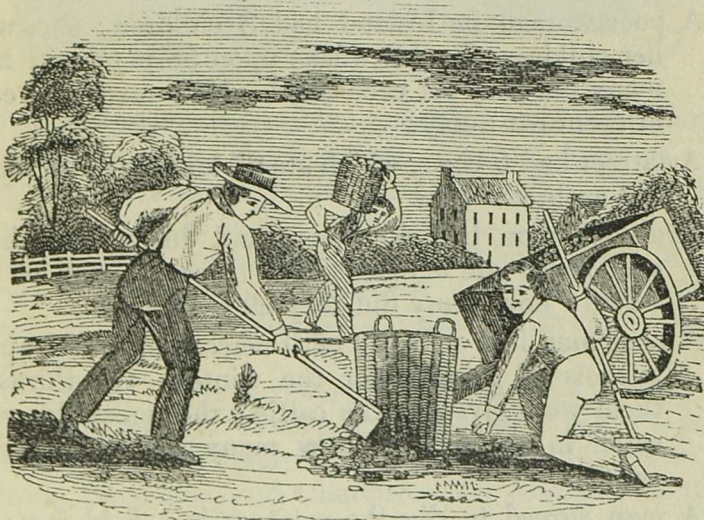
Here are some people digging up potatoes. In spring,
the ground is ploughed, and then the potatoes are planted.
In gardens, however, the ground is only dug with a spade,
as a plough and horse would be a cumbersome concern in
so small a space. A single potato will produce half a dozen,
and sometimes more.

D

The potatoes are ready to be dug in autumn. When roasted or boiled they are excellent food, and many people eat them instead of bread. In Ireland, where the poor people cannot get meat or bread, they live almost entirely upon potatoes.

I suppose you have seen a field planted with potatoes. In a few days after they are planted the stalks shoot up, and in a little time they produce pretty purple and white flowers. The people clear away the weeds, and draw the earth round the stalks, so as to form little hills. Each of these hills generally yields from 6 to 12 potatoes.

QUESTIONS.

1. If 1 potato that is planted produces 7 potatoes, how many will 4 produce ?

2. If 3 children eat 42 potatoes in a week; how many do they eat in a day ? How many does each child eat in a day ?

3. A poor woman in Ireland had 3 children; she, with her children, lived 2 weeks upon 56 potatoes; how many did they eat each day ? How many did each of them eat a-day ?

4. A farmer had 5 cows, which ate 27 bushels ; how many did each cow eat ?

5. The same man had 40 sheep, and during the winter each sheep ate a bushel and three-quarters of potatoes ; how many did they all eat ?

6. A poor man had a family of 9 persons ; he laid up 84 bushels of potatoes for the winter ; two-thirds of them were given to the cattle ; the remainder were eaten in the family ; how many did each person eat ?

7. A man agreed to dig the potatoes in a field for one-quarter of them ; the field produced 84 bushels, and the man sold his share for 2 shillings a-bushel : how much did he get ?

TWENTY-NINTH LESSON.

ABOUT COTTON.

This picture represents the manner in which the negroes cultivate cotton in the southern states of America. The seed is planted in the ground, and the stalk soon shoots up to a considerable height. The cotton grows upon these stalks in little bunches, each bunch being enclosed in a sort of pod. The cotton is gathered in the autumn, and is separated from the seed by a machine invented for that purpose.

When the cotton is ready, it is packed into strong bags, and sent to market. It sometimes sells for 2 pence a-pound, and sometimes for more. A great many ships go to New Orleans, Savannah, and Charleston, for cotton. When they are loaded, they sail to England and France, where the cotton is sold. It is then manufactured into various kinds of cloth, as calicoes, ginghams, muslins, and so on.

QUESTIONS.

1. If 2 pounds of cotton will make 3 yards of cloth, how many yards will 5 pounds make ? 6 ? 7 ? 8 ? and so on.

2. A woman carried 2 dozen eggs to market, which she exchanged for cotton, to be spun for knitting stockings ; the eggs were a halfpenny each, and the cotton 2 pence a-pound ; how much cotton did she get for the eggs ?

3. A ship from Charleston to Liverpool, with 56 bags of cotton on board, was wrecked on the Welsh shore ; the people saved about 3 quarters of the bags of cotton, and were paid half a crown for each bag that they saved ; how much did they receive ?

4. A vessel was bound to Liverpool, having on board 96 bags of cotton ; the vessel took fire, and two-thirds of the cotton was destroyed ; how many bags remained ?

5. A boat that was going down a river in America, was overset by a squall ; of 69 bags of cotton it contained, 27 of them were lost ; how many were saved ?

THIRTIETH LESSON.
ABOUT STUFFS FOR MAKING CLOTHES.

This picture represents a linen-draper who sells calicoes, ginghams, handkerchiefs, shawls, woollen cloths, ribbons, tape, thread, and many other articles. In large towns there

are many different shops for the sale of these and other things. The person who sells cloths for gowns and other parts of the dress of women and children is called a haber-dasher.

QUESTIONS.

1. A woman went to a haberdasher's shop and paid 2 shillings and 6 pence for 4 yards of ribbon; how much was the ribbon a-yard?

2. The same woman bought 3 pieces of tape for 3 pence each, and 6 dozen of buttons for 3 halfpence a-dozen; she gave the shopkeeper a half-crown piece; how much change did he return to her?

3. Another day, she bought 24 pocket-handkerchiefs for her 4 children, and paid 14 shillings a-dozen for them; how many handkerchiefs had each child? How much did each handkerchief cost?

4. A little girl went to a shop with 3 shillings to buy some ribbon for her mother's new bonnet; she wanted 6 yards; the price of the only pretty one was 5 pence halfpenny a-yard; had she money enough?

5. Suppose it autumn, Johnny, and you want some new clothes to keep you warm in the coming winter; now, if your cloth-jacket, waistcoat, and trousers cost £3, 10 shillings, your boots 10 shillings, your woollen socks 10 shillings for a dozen pairs, and your gloves 1 shilling; how much will all these things cost?

6. It is now spring, Miss Susan, and all the birds are sing-ing, and the flowers budding in the warm sunshine. You wish to play in the garden, and your pelisse and stuff gown are too hot. Your mother therefore gets 4 yards of muslin at a shilling a-yard for a frock. Then she buys you a straw-bonnet at 6 shillings, decorated with a pink ribbon, which costs 1 shilling and 6 pence. She spends 3 shillings and 6 pence more for a cambric tippet and gloves. Now, tell me how much all these articles cost?

7. A man had 4 sons; John's clothing cost him £2 a-year; Thomas's cost twice as much; Charles, who was inclined to be a dandy, spent twice as much as Thomas; but Henry, who was a very fine man indeed, spent as much as all the rest together; how much did he spend?

8. A man bought himself 2 yards of cloth for a frockcoat, at 16 shillings a-yard; 2 yards of black silk for lining, at 3 shillings a-yard, and paid the tailor 10 shillings for making it; how much did the coat cost?

9. A lady bought 3 gowns for her 3 daughters; the first cost half as much as the second, and the third as much as the other two; and they all cost 36 shillings; how much did each cost?

You see from the answers to these questions that parents are put to a great expense in purchasing clothes for their children. Young persons are generally fond of new clothes, but they are not apt to consider how much they cost. A boy's clothes often cost more than his father could gain by a week's hard labour. A little girl's bonnet will cost 2 shillings, which is more than her mother can earn in a day. Now, I hope all my little readers will remember that their clothes cost a great deal of money, and I hope they will take care of them. Children, whose parents are poor, should not be to anxious for new clothes, because their parents are obliged to labour so hard in order to get them, and rich people should not dress their children in an extravagant manner, for, in so doing, they train them up to vanity, and to think the better of themselves for their fine clothes.

MORE QUESTIONS ABOUT CLOTHES.

1. If a girl's frock costs 4 shillings, her bonnet 3 shillings, her shoes 5 shillings, her stockings 1 shilling, and the rest 6 shillings; how much does all she has on cost?

2. A poor woman had 3 children, who cost her 3 shillings and 6 pence a-week each for their clothing, food, and schooling; by hard labour she earned 2 shillings a-day; how much did she gain a-week over the expenses of her children?

3. The same poor woman paid a shilling a-week for her lodgings in the little brown cottage on the edge of the common, while she and her aged mother spent 3 shillings a-week for their food ; add this to the cost of her 3 children in the former question, and tell me how much she was in debt at the end of the week ?

My little readers will see that this poor woman could not earn enough to support her family. We should learn to pity such people ; and if it is ever in our power to assist them, and save them from being unhappy, it is our duty to do so. It is indeed not only a duty, but I am sure it is a great pleasure, to assist those who are industrious, and yet in want.

4. If a man has an income of 20 shillings a-week, how much may he spend each day so as not to run in debt ?

5. Suppose your father were to allow you £14 a-year for clothing, how much would you have to spend each month ? each week ? each day ?

6. A woman with a family of 5 children paid £10 a-year for her house ; for sugar she paid £2, for tea the same, for bread £10, for meat £15, for milk £4, for clothing £10, for schooling £7 ; how much does all this amount to ? How much must she have earned each month to pay it ?

7. An Irishman came to Liverpool, and died suddenly after his arrival, leaving a boy of 12 years of age without money or any means of living. The poor little fellow wandered about for some time begging for bread, but in this way he was very near starving to death. He then went to Mr Goodman, and asked him to give him some employment Mr Goodman printed a daily newspaper, and agreed to give the poor boy 6 pence a-day for carrying it about the town to the people who liked to read news. The boy got an old Irish woman to feed him for 3 pence halfpenny a-day, and to lodge him for a penny a-night ; how much could he save a-week for clothes ?

THIRTY-FIRST LESSON.

ABOUT A BAKER'S SHOP.
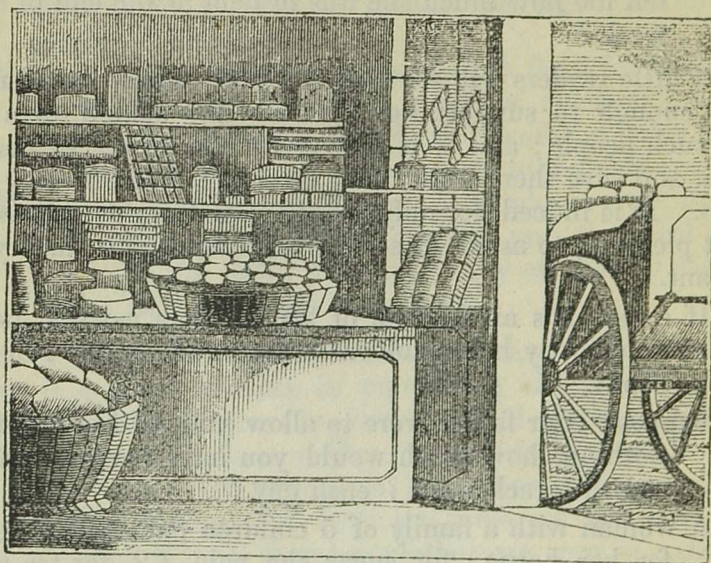
Here is a picture of a baker's shop. In the window you may see loaves, gingerbread, and biscuits. Bread is made of flour, water, and yeast. Gingerbread is made of flour and treacle, and grated ginger.

QUESTIONS.

1. If you go into a baker's shop and buy 2 pounds of gingerbread-nuts at 10 pence a-pound, and each pound contain 20 nuts, how much would each nut cost?

2. If 40 gingerbread-nuts be divided between 6 boys, how many will each boy get?

3. A man, his wife, and 4 children, eat 3 loaves and a half a-day; how many loaves will they eat in a week? in 2? in 3?

4. If a boy eats one loaf a-day, how many loaves will 5 boys eat in 4 days? 5? 6?

5. If a man pays 4 pence for a loaf of bread, and uses 4 loaves a-day in his family, how much does he pay for bread in a week? in 2 weeks? 3? and so on.
6. An old woman sold gingerbread and biscuits about the street; the contents of her basket cost 2 shillings and 9 pence at the baker's; if she gained 4 pence halfpenny on them, how much did she sell them for?
7. A man went to a baker's shop after the market was over, and he was returning home to his family; he bought 10 quartern loaves at 8 pence each, and, having a little money to spare, he bought a dozen of biscuits at 3 a-penny, and 3 dozen spiced ginger-bread-nuts at 6 a-penny; how much did he spend?

THIRTY-SECOND LESSON.

ABOUT CLOCKS AND WATCHES.
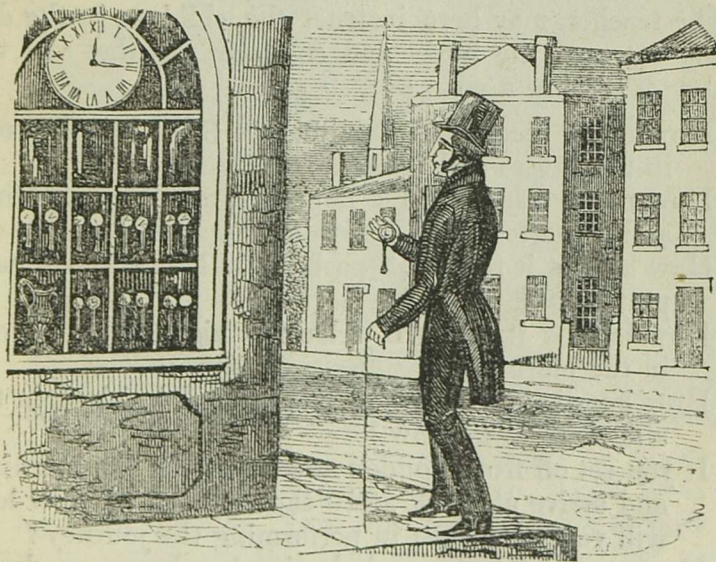
Here is a gentleman looking at a clock in a watchmaker's window, to see if his watch is right. It is by clocks and

watches that we know what time of day or night it is.   I
suppose all my little friends have often seen clocks and
watches.   They are not only very useful things, but also
very curious.   They contain a great many little wheels,
and are among the most ingenious contrivances invented by
man.   The best are made in England, France, and Switzer-
land.

I shall now ask you some questions about clocks and
watches, or rather about time.   I suppose you know that
every hour is divided into 60 minutes, and each minute into
60 seconds.   You know, also, that 24 hours make a day,
and seven days make a week; four weeks make a month,
and twelve months a year.

QUESTIONS.

1. How many seconds are there in a minute ? How many
    minutes in an hour ?   How many hours in a day ?
    How many days in a week ? How many months in
    a year ?

[The teacher may here instruct the children in the dif-
ference between the lunar and calendar months, and the
number of days in a year.]

2. How many seconds in 2 minutes ? 3 ? 4 ? and so on;
    in 2 minutes and a half ?
3. How many minutes in 1 hour and a half ? in 2 hours
    and a quarter ? in 1 hour and 3 quarters ? and so on.
4. How long is it from half-past 12 till half-past 1 ? half-
    past 2 ?
5. How long is it from 10 o'clock at night till 11 o'clock
    in the morning ?
6. How long is it from to-day at noon till 4 o'clock in the
    afternoon to-morrow ?
7. If you set off from London at 5 o'clock in the morning,
    and arrive at York at 10 the next night, how long
    will you have been in performing the journey ?
8. If you spend 2 hours each day in play, how many hours
    will you spend playing in a week ? a month ? a
    year ?   How many days, weeks, and so on, will all
   these hours amount to ?

9. If you study 6 hours a-day, how many will you study in a week ? a month ? a year ? and so on.

[The teacher will perceive that many of these operations may require to be done with a slate. The more difficult questions will of course be deferred till the children have become familiar with the easier ones. The teacher may easily supply new questions suited to the particular capacity of the pupil, as well as to furnish more ample and diversified exercises.]

LESSONS ON THE FOUR FIRST RULES OF ARITHMETIC.

FIRST LESSON.

ABOUT ADDITION.
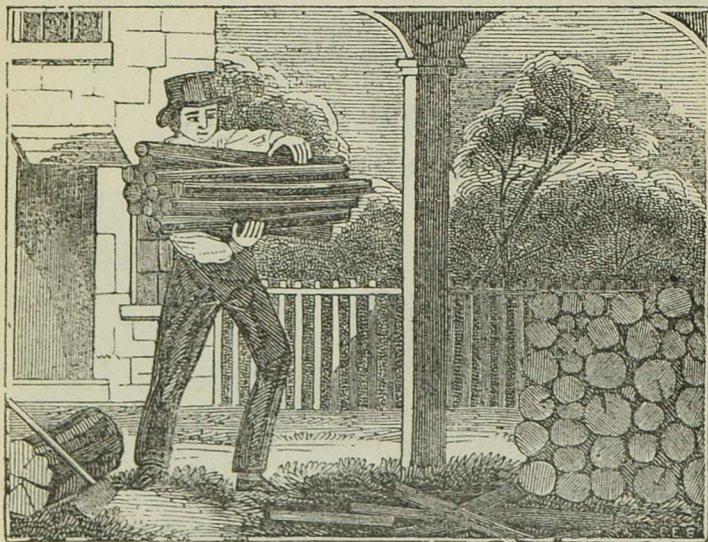
Here is a picture which represents a pile of wood ; near it is a man with his arms full of sticks, which he is going to lay upon the pile. Now, this man has been at work some time in laying up this pile of wood ; the first time he brought 8 sticks, the next 7, the next 9, the next 10, the next 5, the next 7, the next 11, the next 14, the next 16, the next 5, the next 20, and now in his arms he holds 17.

Thus, you see he has been *adding* one armful after another, till he has collected a great heap of sticks. Will you be so good, my little friend, to tell me how many there are in the heap, including those in his arms?

The process by which you answer this question is called *Addition*, because, like the man in the picture carrying his sticks, and adding one armful after another, till he collects the whole into one pile, so you add the various numbers together till you have collected the whole into one sum. *Addition, then, is the collecting of several numbers into one sum.*

[Let the teacher here ask the pupil what addition is; let the pupil illustrate it by the man and the pile of wood. Let him then be required to pick out from the preceding lessons, a number of questions which belong to addition. The teacher can then invent such questions as he deems necessary.]

SECOND LESSON.

ABOUT SUBTRACTION.

Here is a woman with a basket of eggs. She had in it

39; but she has just *taken out* 17, which she has sold. Now, tell me how many she has left?

The process by which you answer this question is called *Subtraction*, because this word means to *take out* or *take away;* and in finding out how many eggs the woman has left, you *take* 17 *out* of 39, by which you learn that she has 22 left. *Subtraction, then, is the taking out or away of one number from another.*

Now, let me ask you a question. If a thief were to go behind a boy who has one hundred and fifty marbles in his pocket, and should steal 37 of them, and run away, would not this be a case of subtraction? Why would it be subtraction? What is the meaning of subtraction? How many marbles would the boy have left in his pocket after the subtraction of 37?

<div align="center">See note on the former lesson.</div>

THIRD LESSON.

ABOUT MULTIPLICATION.
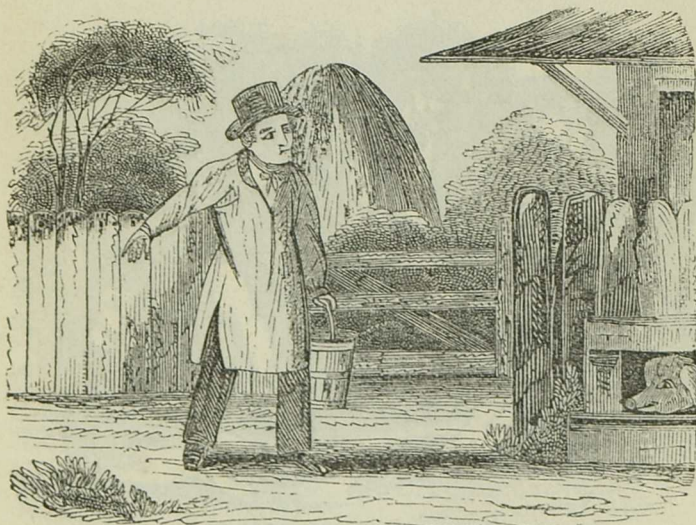
A farmer had some potatoes, which he wished to give to his pigs for dinner, and so he told his man to carry them.

The man did as he was directed. He carried 8 potatoes each time, and he went 11 times. Now, how many potatoes did he carry to the pigs in all ?

The process by which you answer this question is called *Multiplication*, because, as the man *multiplied* or added to the potatoes in the pig-sty each time he went to it, so you multiply the number 8, 11 times, and thus find that he carried 88 potatoes to the pigs for their dinner. *Multiplication, then, is a short way of adding several equal numbers into one sum.*

A boy once had a small garden in which he raised flowers ; these he sold, and put the money into a box. In one month he sold 17 bunches of flowers, for each of which he received 3 pence. All this he put into the box as he received it, and thus added to or *multiplied* his little store of cash. When he opened the box, how many pence did he find collected ?

FOURTH LESSON.

ABOUT DIVISION.

Here are 6 boys, who have been in the woods gathering nuts. It has been agreed to divide them equally ; and

on counting them, it is found there are 240 in all. How many nuts should each boy have ?

The process by which you answer this question is called *Division ;* the reason is, that, as the boys *divide* the nuts. so you *divide* or *separate* 240 into 6 equal sums, by which you find that each boy is entitled to 40 nuts. *Division is then the dividing or separating of any given number into several equal parts.*

Now, I will tell you a story. There was once a school-master who often flogged his scholars with a birch-rod. One of his rules was to give 40 strokes with this birch to every boy who should speak while he took the nap which he was used to delight in every afternoon. Well, one day, as he was fast asleep, a little boy spoke aloud, and woke him. He discovered that the offender was one of a class of 8 boys who sat on his left ; but which particular boy it was, he could not find out, and the other boys would not tell. He therefore divided the 40 lashes among the class. Pray tell me, how many did each boy receive ?

See note to the foregoing lessons.

THE END,

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