NUMERACY

TITLE: Ratios, proportions and percentages

AGE GROUP: 7 – 8

DURATION: 30 – 45 minutes

LEARNING OUTCOME: L03

KEY CONCEPTS: Applying fractions, proportions and percentages

Learners need to know that counting plays a key role when we daily decisions on how to use our resources. Relative values are useful when we make decisions. Fractions and percentages give us comparative figures that are needed for effective decision making.

MATERIALS NEEDED:

1. Writing materials – pen, pencil, paper
2. Microsoft Excel or similar spreadsheet

LESSON DESCRIPTION:

The context of this session's activities is time. Learners assess the use of time in context. They begin to realise that time spend doing one thing means giving up on other things. Sometimes, the amount of money earned is based on the length of time spent doing something, a job. They begin to account for money earned on basis of time. Yet again, the type of activities can be varied to extend the scope of learning.

ACTIVITY

a)   How many hours are there in a day?

b)   Let us say that you spend your time EACH day during the week this way (not including weekends):
- Sleeping   8 hours
- School   6 hours
- Hobbies at home   4 hours
- House chores   4 hours
- Doing other things   ?

(i)   How many hours do you spend doing other things?
(ii)   What fraction of your time each day do you spend doing the following?
- Sleeping
- In school
- Completing house chores

(c) Your parents have promised to give you £2 per hour when you complete house chores. However, a quarter of your weekly earnings will be donated to charity looking after homeless children.

(i)   How much money will you earn each week?
(ii)   How much money will you earn each month?
(iii)   How much money will you have each week after the donations to charity?
(iv)   How much money will you have each month after the donations to charity?
(v)   What will your total contributions to the charity be for a year?

WORKSHEET

a. Hour in the day

b.

(i)   Hours spent doing other things

(ii)   Sleeping hours as fraction of the total hours in a day

Time in school as a fraction of the total hours in a day

House chores hours as a fraction of total hours in a day

c.

    (i)   Amount earned each week

    (ii)   Amount earned each month

    (iii)   Amount earned each week after donations to charity

    (iv)   Amount earned each month after donations to charity

    (v)   Amount earned each year after donations to charity.

SOLUTION:

a) 24 hours

b) (i) [24 – 8 – 6 – 4 – 2 = 4 hours are left for doing other things

Fraction of time for sleeping:	8/24 = 1/3	
Fraction of time spent in school	6/24 = 1/4	
Fraction of time spent doing chores	4/24 = 1/6	

c) Your parents have promised to give you £2 per hour when you complete house chores. You will complete house chores 4 hours each day. However, a quarter of your weekly earnings will be donated to a charity looking after homeless children.

(i)   How much money will you earn each week?
Earnings per week   £2 x 4 x 7   £56.00

(ii)   How much money will you earn each month?
Monthly earnings   £56 x 4   £224

(iii)   How much money will you have each week after the donations to charity?
Total weekly earnings   £56
Weekly donations to charity ¼ x £56   £14
Net earnings   £42

(iv)   How much money will you have each month after the donations to charity?
Monthly earnings   224
Monthly donations to charity   ¼ x 224   56
Net earnings   £168

(v)   What will your total contributions to the charity for a year?
[There are 12 months in the year]   56 x 12   £672