

# NUMERACY



**TITLE:** Ratios, proportions and percentages

**AGE GROUP:** 9 - 11

**DURATION:** 30 – 45 minutes

**LEARNING OUTCOME:** L03

**KEY CONCEPTS:** Learning to communicate using numbers, percentages and diagrams.

Learners need to understand the role that numbers, and images play when we communicate with others. This session extends the idea that pie charts are useful in summarising information on the relationship between parts and wholes.

**MATERIALS NEEDED:**

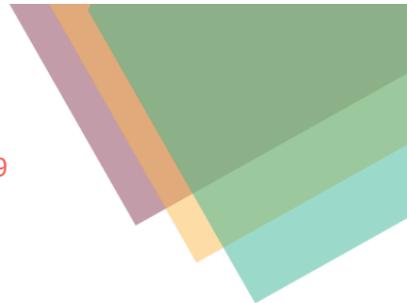
1. Writing materials – pen, pencil, paper
2. Microsoft Excel

**LESSON DESCRIPTION:**

Take learners through the key stages of working out proportions of the whole that is taken up by each part. An illustration is given above. Learners will then attempt the activity of the session and obtain feedback on their answer. Facilitators can extend the range of activities by adapting the storyline. Alternatively, let the children identify who uses pie charts and what they use it for.

**ILLUSTRATION**

|                  |  |
|------------------|--|
| A                | 1  |
| B                | 3  |
| C                | 6  |
| $1 + 3 + 6 = 10$ |  |
| A                | $= \frac{1}{10} \times 100 = 10\%$             |
| B                | $= \frac{3}{10} \times 100 = 30\%$             |
| C                | $= \frac{6}{10} \times 100 = \underline{60\%}$ |
| Total            | <u>100%</u>                                    |



**Activity**

The recipe for a delicious birthday cake shows the ingredients and the cost of the ingredients below:

| <u>Ingredient</u> | <u>Cost</u> |
|-------------------|-------------|
| Flour             | 1.2         |
| Chocolate         | 0.8         |
| Organic eggs      | 1           |
| Butter            | 0.4         |
| Milk and cream    | 1.8         |



Create a pie chart and label the portion of the pie chart covered by each ingredient.

You may argue that the recipe does not list all the inputs and costs of the cake. Can you identify other ingredients and costs which are not included in the list above?

**WORKSHEET**

| Ingredient     | Cost | Percentage |
|----------------|------|------------|
| Flour          | 1.2  |            |
| Chocolate      | 0.8  |            |
| Organic eggs   | 1    |            |
| Butter         | 0.4  |            |
| Milk and cream | 1.8  |            |
| Total          |      |            |