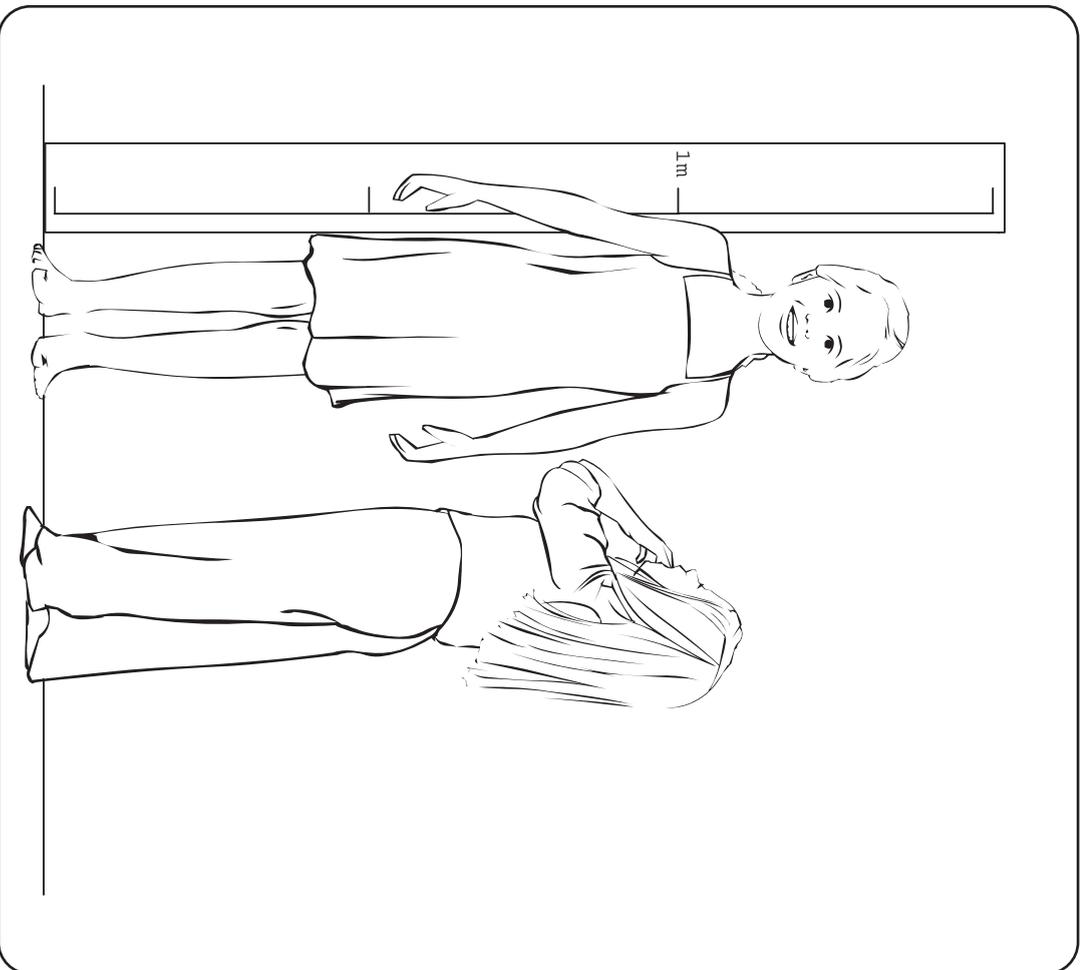


# Observation Booklet 7b

## Graphs and charts



This is Booklet 7b in a series of seven booklets.

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Success for All website:

[www.successforall.gov.uk](http://www.successforall.gov.uk)

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## Introduction – Booklet 7b

### In this booklet you will find:

- Sections to read.
- Activities to complete.

### As you work through the booklet, you should discuss with your trainer or trainer:

- your thoughts about the activities;
- new words and terms for your glossary;
- your self-assessment in the **How did I do?** section.

### By completing this booklet you will learn:

- how to record results from observations using graphs and charts;
- when to use a pie chart;
- when to use a bar chart;
- when to use a tracking chart;
- the advantages and disadvantages of using charts and graphs.

### Disclaimer

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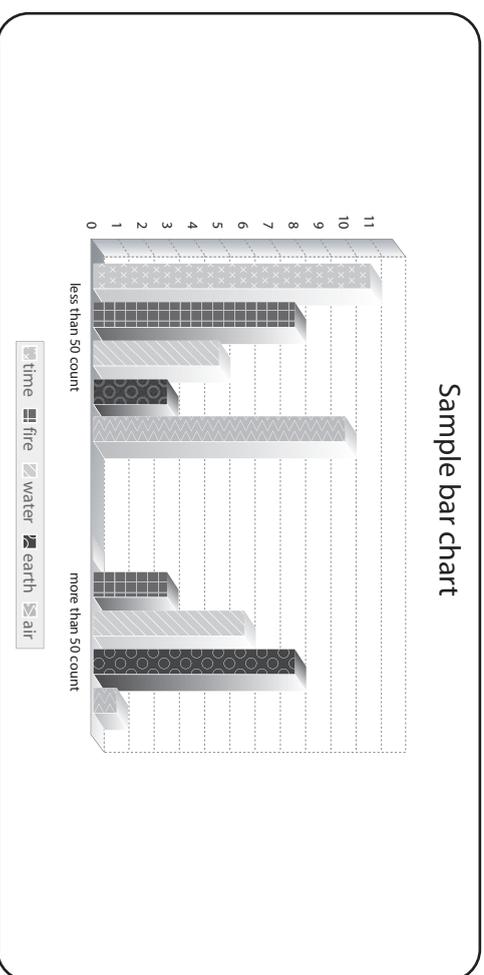
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# Charts and graphs

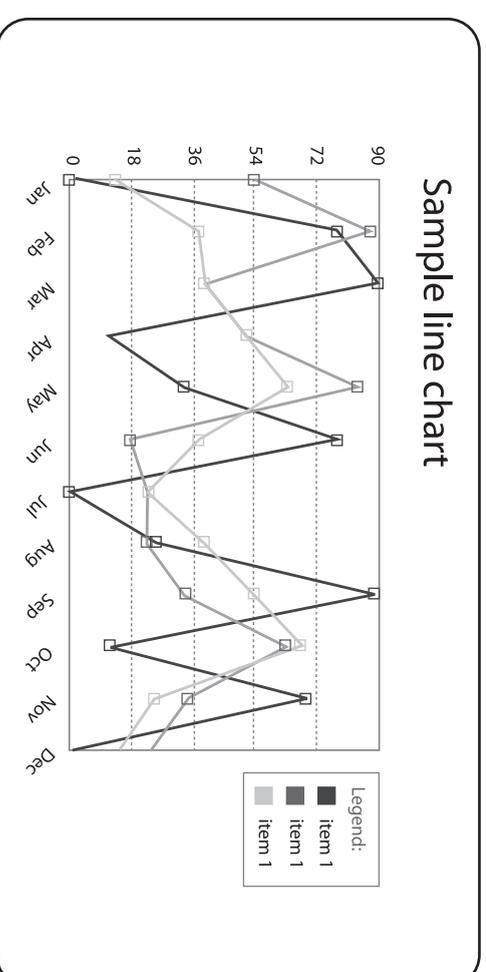
Charts and graphs can help you represent in visual form the information (data) you have collected in your observations. There is a variety of charts and graphs that you can use to give a clear picture of the information you have gathered.

These include:

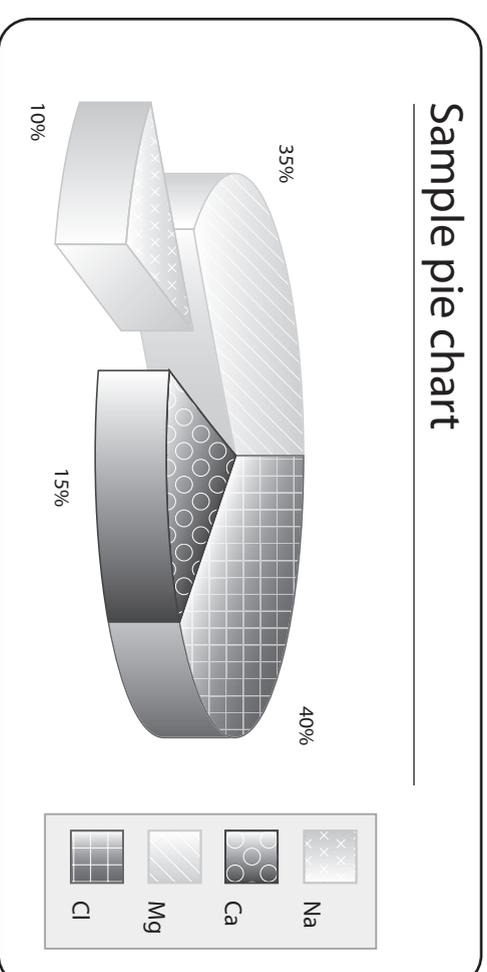
## Bar charts



## Line charts



## Pie charts



These methods can be used to collate information about a group of children or a single child.

## Bar charts

Bar charts are particularly useful for recording comparisons such as the heights or weights of a group of children.

### Activity 1

Suppose you had measured the heights of a group of children during a mathematics activity in an early years setting. Below are the heights of some of the children you measured.

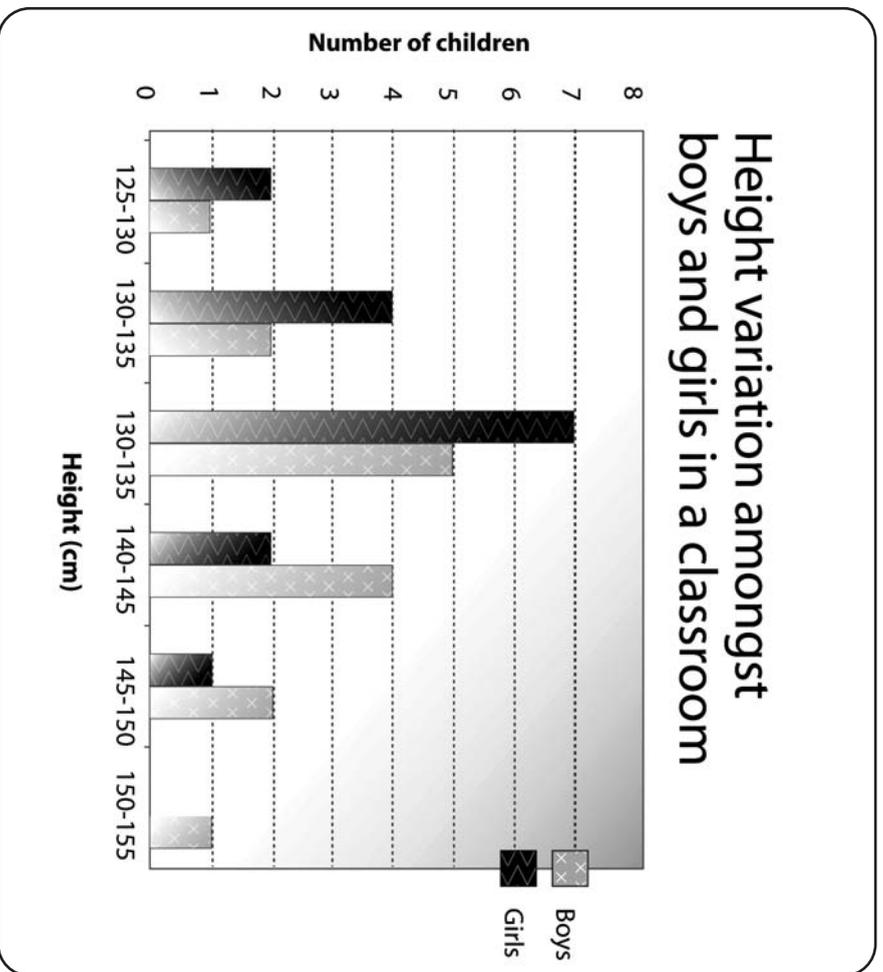
Serena	112 cm	5 yrs 9 m
Pradeep	125 cm	5 yrs 10 m
David	115 cm	5 yrs 11 m
Kwame	110 cm	5 yrs 7 m
Musrat	115 cm	5 yrs 11 m
Joanna	105 cm	5 yrs 8 m
Sasha	98 cm	5 yrs 0 m
Jason	122 cm	5 yrs 2 m

Set out this data in a bar chart on the table below. Put the names of the children in order of birth from the youngest to the oldest in the spaces along the **horizontal axis**. The heights are shown along the **vertical axis**. You need to mark off each column with the height of the child.

HEIGHT IN CENTIMETRES		NAMES of CHILDREN									
130											
125											
120											
115											
110											
105											
100											
95											
90											
85											
80											

## Making sense of your observation data using a bar chart

Refer to Booklet 4a to remind yourself about the steps to making sense of your observation.



## Activity 2

You should write about what the chart is telling you. Use up-to-date centile charts which can be downloaded at no cost from <http://www.cdc.gov/growthcharts>.

Your teacher or trainer will help you understand the charts. Make sure you use the centimetre measures. When you have decided the average height for a 5 year old, draw 2 coloured lines to show the average height for this age group – one line for boys and one for girls. Comment on any children who fall above or below the average or outside the normative ranges remembering to take into account the possible drawbacks of assessment against the norm.

### Interpretation and assessment:

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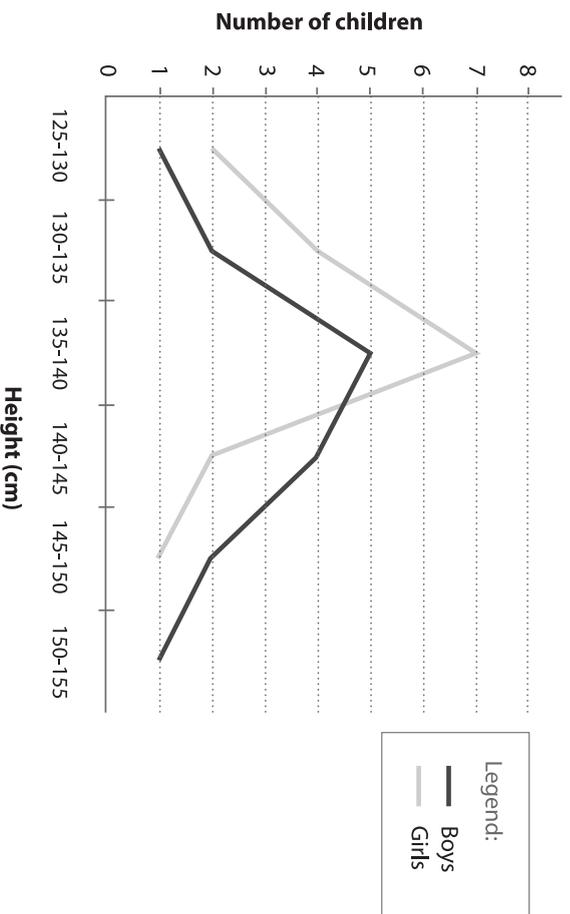
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## Line graphs

Line graphs are a useful way of recording a particular stage of development over a longer period of time, for instance a baby's weight gain, or head circumference.

### Height variation amongst boys and girls in a classroom



## Activity 3

Draw a line graph to show the information below on a sheet of graph paper. Put the age of the baby on the horizontal axis and mark the weight on the vertical axis. Where the age and weight lines intersect mark a small cross. When you have plotted all the crosses, join these up with a line.

Age	Weight
Birth	3.5 kg
1 month	4.4 kg
2 months	4.9 kg
3 months	5.5 kg
4 months	6.7 kg
5 months	7.5 kg
6 months	8.0 kg

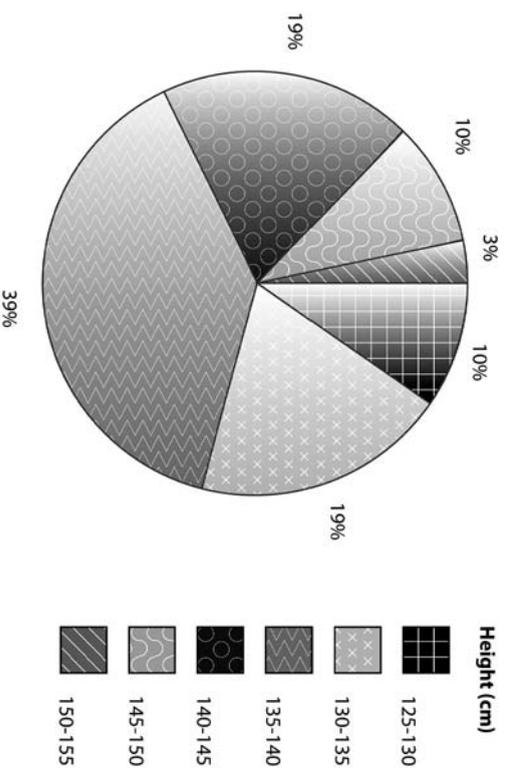
You should find a growth 'centile' chart to compare your findings with the 'norm'. Your teacher may give you a centile chart or you may need to supply one yourself. These charts can be downloaded free of charge from the website: [www.cdc.gov/nchs/data/nhanes/growthcharts/set2/all.pdf](http://www.cdc.gov/nchs/data/nhanes/growthcharts/set2/all.pdf)

## Pie charts

Pie charts can be used to record the behaviour of a child over a particular span of time, for instance free play time or outdoor time. They can also be used to draw together information about a group of children. Perhaps you want to show how many children used certain pieces of equipment and which was the most popular if you were observing free play sessions. You may decide to show what children brought in their packed lunch if you were doing an observation of lunchtime at school.

A pie chart looks just like its name suggests – each piece looks like a slice of the pie. You need to add up the total amount of time or numbers of children, and then divide the pie up into pieces according to the time or the number of children.

### Height variation amongst children in a classroom



## Activity 4

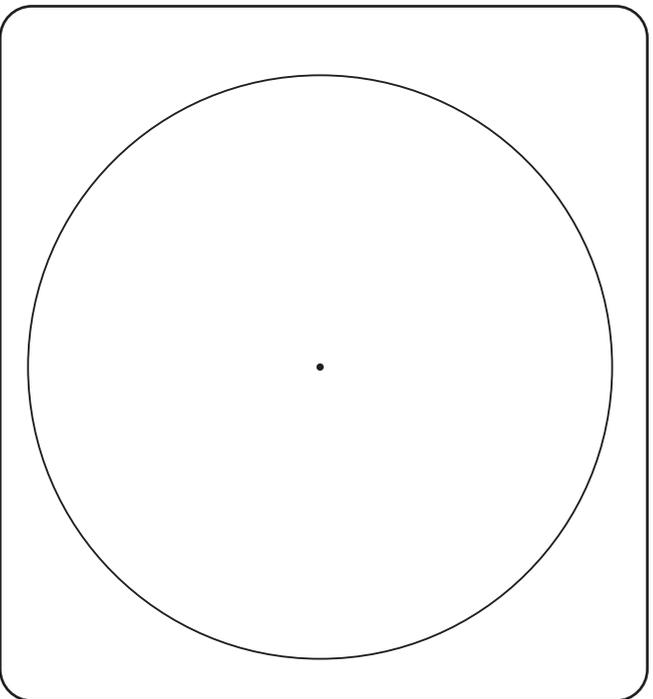
Imagine you gained the following information while observing a child during a free play session.

- Played with a jigsaw for 2 minutes.
- Looked at books for 1 minute.
- Played with the water for 11 minutes.
- Ran around room for 2 minutes.
- Played with wooden blocks for 2 minutes.
- Played with cars for 2 minutes.

Draw a pie chart to show visually how the child spent his time using the information above. Calculate the number of minutes and then divide the circle up appropriately. You will need to colour in each segment with a different shade. Then add a key to show what activity each colour represents.

## Activity 5

Pie Chart showing  
\_\_\_\_\_ minutes.



Key

<input type="checkbox"/>	_____

You may want to observe how a child or children use the available equipment and what they seem most interested in during free play time. You can do this with a **tracking chart**.

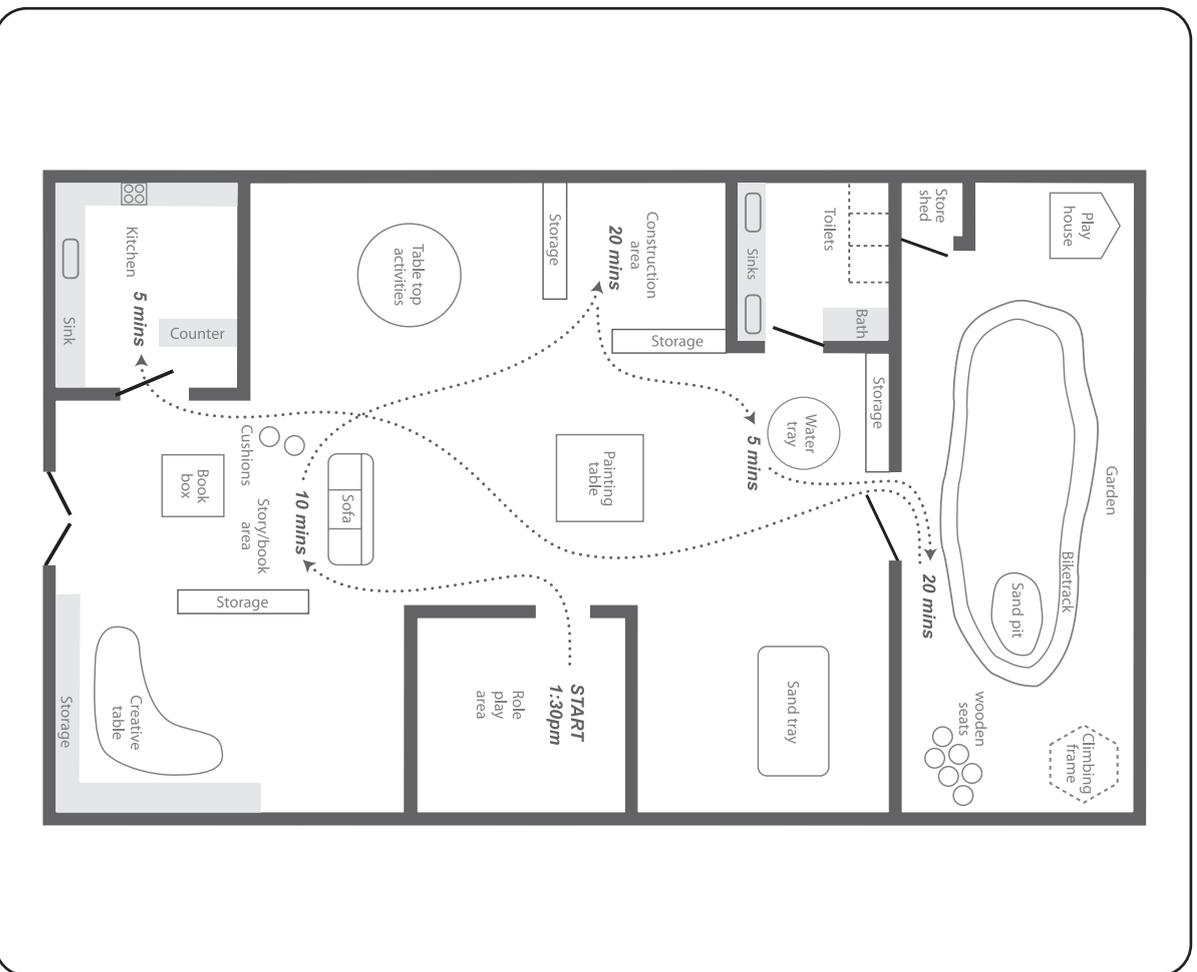
One method is to draw a plan of the room and then indicate how the child moves from one activity area to another. You can do this by drawing a line with arrows indicating where the child went. If you are observing more than one child use different coloured pens.

### TOP TIPS

For observing using a tracking chart

- Draw a floor plan of your placement (nursery or reception class).
- Photocopy your plan. Use a clipboard and notebook.
- Sit where you can get a clear view of a child's movements around the room for 30 minutes. You should move your position as the child moves around the room.
- Draw lines with arrows indicating on the chart where the child went. Note the time spent in each area on the plan (e.g. 6 minutes).

## Example of a tracking chart on a plan



## Activity chart

Instead of drawing an exact plan of the room with all the areas in the correct position you can make a tracking chart which shows all the available types of activities/equipment in any order.

### Tracking Chart

Date: .....

Name: .....

Age: .....

Water	Outside
Sand	Books, Tapes, Storytelling, Rhymes
Paints: Mixed or Powder	Puzzles / Games
Trying Up	Computer: Information Technology

note times  
use arrows  
A = Adult directed / adult available  
rest = free choice

Signed: .....



## Activity 8

### Learner evaluation

How did I do?

**Well done! You have now completed Booklet 7b.**

Now spend a few minutes thinking about how you did and fill in the boxes below. Try to give examples when you make a comment. Then discuss your responses with your trainer or trainer.

What have I learnt so far?

What areas do I need to concentrate on?

What help do I need? Where will I get this help?

When will I take action on this?

What skills do I need to practise and develop in the workplace?