# Busy at Maths 6 - Sixth Class - Teacher's Resource Book



## Data 3

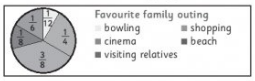
Home/School Links Sheet 30

Your child will be learning to *represent and interpret data* and *construct pie charts* over the coming days. S/he will need to know some of the language associated with data: pie chart, favourite, survey, data, represent, fraction, vote, altogether, key, percentage, calculate, degrees, sector, compare, protractor, total, average, calculate, recorded, table, multiple, average, above, below.

### What are pie charts?

- Pie charts provide information at a glance.
- Pie charts look like pies (circles) cut into different slices. Each slice is called a *sector*.
- Each sector is a fraction of a circle.
- Each sector has an angle within the circle stretching out from the centre. Angles are measured in *degrees*, so each sector represents a certain number of degrees.
- There are 360 degrees in a full circle.
- Each sector is given a different colour. The colour is always explained in a *colour key to* make it easier to identify what each sector represents.

Look at this pie chart of favourite family outings. You will find the colour version on page 159 of the textbook.




- *How many sectors are in the circle?*
- *What fraction of people voted for bowling/shopping/cinema?*
- *How many degrees are represented in the shopping sector?*
- *How do we find the number of degrees for shopping? (Divide the number of degrees in a circle by 4, e.g. 360 ÷ 4 = 90°.)*
- *How do we find the number of degrees for going to the beach? (360 ÷ 8 = 45°.)*
- *If 144 people voted in the survey, how many people voted for shopping/beach/etc.?*

### Search for pie charts

Look for examples of pie charts in magazines, newspapers and online (under supervision). Discuss and examine them with your child and ask questions such as:

- *What is the title of the pie chart?*
- *How many sectors are in it?*
- *What categories are represented on the chart?*
- *Which category is largest/smallest?*

### Constructing a pie chart

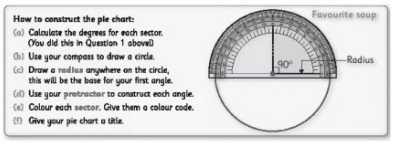
To construct a pie chart, your child must calculate how many degrees there will be in each sector. Look at the following example.

| Soup | Vegetable | Chicken | Tomato | Potato and Leek |
|---|---|---|---|---|
| Votes | 15 | 20 | 10 | 15 |
| Fraction | $\frac{1}{4}$ | | | |
| Degrees | | | | |

To calculate the degrees, we must do the following:

1. Calculate the total number of votes: 15 + 20 + 10 + 15 = 60.
2. Now place the number of votes for each category over the total, e.g. vegetable soup = $\frac{15}{60} = \frac{1}{4}$.
3. Now calculate how many degrees there are in $\frac{1}{4}$ of a circle: 360° ÷ 4 = 90°.
4. Now place the number of votes for chicken soup over the total, e.g. chicken soup = $\frac{20}{60} = \frac{1}{3}$.
5. Now calculate how many degrees are there in $\frac{1}{3}$ of a circle: 360° ÷ 3 = 120°.

Now help your child calculate the fractions and degrees for the remaining three soup flavours.




Once you have calculated the degrees, constructing the pie chart is easy!

1. Draw a circle (using a compass).
2. Draw a radius anywhere on the circle. Use this as the base for your first angle (sector).
3. Using a protractor, draw your first angle.
4. Continue drawing all the angles until the pie chart is complete.

Now complete the pie chart with your child and discuss the outcomes, e.g.

- *Which soup was most popular?*
- *Which soup was least popular?*
- *How many degress were allocated to tomato soup?*
- *How many degrees were allocated to vegetable soup?*
- *What fraction of the pie chart was taken up by potato and leek soup?*



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