Third / Fourth Class ~ Lesson 4

Theme
Census ~ All about Us

Objectives
That the child will be enabled to:
- describe the Classroom Census process
- interpret census data presented in graphical format
- analyse the data and discuss how it might be used
- use this data for further investigation and decision making
- represent data in graphical format and use ICT to create graphs

Methodologies
- ✓ Problem-Solving
- ✓ Collaborative Learning
- ✓ Using the Environment
- ✓ Active Learning
- ✓ Skills through Content
- ✓ Talk and Discussion

Mathematical Skills
- ✓ Applying and Problem-Solving
- ✓ Communicating and Expressing
- ✓ Integrating and Connecting
- ✓ Reasoning
- ✓ Implementing
- ✓ Understanding and Recalling

Tasks
- Talk and discussion – revision of ideas and concepts from Lessons One, Two and Three.
- Whole class activity – exploring different graphical representation of the same data
- Individual Work – representing data on a graph
- Pair Work – data analysis
- Plenary – reflecting on and evaluating the classroom census process; discussing how the data collected might be used in decision-making

You will need
- Resource 4.1 'Time Spent on Daily Activities' Worksheet
- Resource 4.2 Block Graph Template
- Resource 4.3 Bar Chart Template
- Resource 4.4 Bar Line Graph Template
- Resource 4.5 Creating Graphs on the Computer
- Resource 4.6 How Healthy is Henry?
- Resource 4.7 Exercise is Fun ~ Track Yours!
- Resource 4.8 Food Diary
- Resource 4.9 Food Group Matching Card Game
- Resource 4.10 Food Pyramid
- Resource 4.11 Healthy Eating Plate

Key Messages
- A census can be carried out at different levels – national level, local level, classroom level…
- Data collected can be represented in different ways – tabular, diagrammatic and graphical format.
- Graphs and diagrams can be used to compare sets and provide information in an efficient way.
- Data can be collected on a global scale or at small group and individual level.
- The information gathered is used to plan for the future.

Integration and Linkage:
English: Oral language: Talk and discussion, asking questions, answering questions, reasoning, describing, explaining, comparing…
Maths: Data representation and interpretation; counting, finding totals, difference…
SPHE: Taking care of my Body ~ Health and well-being – recognise and examine behaviour that is conducive /harmful to health; Food and Nutrition ~ appreciate the importance of good nutrition / realise and accept responsibility for making wise health choices.
Language Development: *Data, represent, interpret, , record, graph chart, table, diagram, Carroll diagram, block graph, bar chart, data, statistics, plan, future, check, count, important, decisions, balance, nutrition, passive, active, exercise, responsibility, food types, food pyramid.. .*

Assessment
The children will
- describe the steps in the Classroom Census Process
- discuss the data/information that has been collected
- understand, create and use the Carroll Diagram, block graph and bar chart
- discuss similarities, differences and uses of each graphical representation
- interpret graphical representations and analyse data
- make suggestions on how data could be used

Teacher Observation Tips
Record any significant events you notice such as a child having difficulty asking and answering key questions, describing the process, creating or interpreting graphs and diagrams.
Note also children who may need to be challenged with the extension suggestions provided.

Extension
- Further investigation of health-related issues – Food / Nutrition
- Collecting data, representing and interpreting
- Study of food groups, food pyramid, healthy eating ideas
- Decision making – planning food diary, healthy eating plate

Home/School Links
Children discuss health issues with their parents/guardians.
Create graphs using ICT at home
Visit www.cso.ie and examine some of the information collected by the Central Statistics Office

Teacher's Notes – Lesson 4

Introduction

Talk and Discussion

Revision of key messages from Lessons 1, 2 and 3– What do we remember?

- Use talk and discussion at whole class level to revise the key concepts covered in previous lessons:
  - ✓ What a census is, why it is held and how it is conducted.
  - ✓ The importance of asking key questions – Who? What? Where? When? Why? How?
  - ✓ How data is collected
  - ✓ How information is used when it has been collected.

- Discuss how the classroom census was conducted. Use the drawings children have made or class photographs of each step in the process to help children to retell the steps in the process.

1. The classroom census form was designed.
2. The census forms were delivered to each child in the classroom.
2. On the day of the census, all the children in the classroom read the questions on the census form and wrote their answers on the form.
3. The census forms were collected from each child.
4. The census forms were checked the answers tallied in a central 'office'.
5. The information is represented on graphs or displayed in diagrammatic or tabular format.
6. These graphs are discussed and findings interpreted.
7. The information can be used to make class/school decisions

- Discuss the questions that were asked on the classroom census form and talk about the findings from the tally sheets displayed in the classroom.

- Focus on the two questions that were used for graphical representation and interpretation i.e.

How healthy do you think you are?
How do we travel to school?
Encourage children to summarise the findings using the graphical representations on display.

Whole Class Activity

- Explain to the children that the data collected in the National Census or indeed in the Classroom Census can be used by everybody to plan for the future and to make important decisions. This data is collected by the Central Statistics Office (CSO).

- It is possible to take one question to study in depth and to use the data that has been collected for further investigation e.g. 'How healthy do you think you are?'

- Explain to the children that in this lesson, the focus will be on examining our own personal health, carrying out further investigation and data collection and deciding on future action.

- In a short brainstorm session, the children can list behaviours which are conducive to health and which are harmful to health. Use also the templates completed in Lesson 3 [Resource 3.1].

Individual work:

- Children are now asked to think about their own lifestyles and the time spent on different daily activities. Use the recording sheet provided [Resource 4.1] to list the number of hours spent on each activity.

- When the table has been completed, encourage the children to reflect on the time spent on passive and active activities using the questions listed at the bottom of the worksheet.

- Ask the children how they might show (represent) this information. Explore the different ways of representing the information e.g. block graph, bar chart, bar line graph. Children could either choose which graph they would like to use for representation or alternatively, the teacher could assign graph types to different groups. Graph templates are provided with this lesson [Resource 4.2, 4.3 and 4.4].

- Children can also make use of ICT to create graphs on the computer. A list of instructions on how to create a graph using MS Excel is included in this lesson [Resource 4.5]. These graphs can be printed and displayed on the Classroom Census board or a booklet of graphs created by the children could be put together.

- Explain to the children that as well as being able to create graphs and represent the data we have collected ourselves, it is also important that we can interpret data from the graphical representations of others.

- The next step will be to have a look at the daily routine of 'Henry' and decide if he leads a healthy lifestyle or not. Show the children the graph of the Interactive whiteboard and guide the children to interpret the data presented. Alternatively, provide small groups or individuals with a copy of the graph and guiding questions [see Resource 4.6 ~ 'How Healthy is Henry?'].

- Emphasise that the final step in the data collection and investigation process is to make use of the findings for decision-making. In Henry's case, list ways in which he could change his lifestyle to improve his health and well-being.

- The children can once again revisit their own individual data and taking care of himself/herself and of promoting a healthy lifestyle. Encourage the children to list suggestions to improving health in relation to exercise both at school and at home. Provide ideas and guidance if children are experiencing difficulty.

- Introduce an individual tracker for children to track and record the time they spend on exercise each day. A sticker or stamp could be used as an incentive to encourage children. The time spent can increase for children who are very active. A sample tracking template, 'Exercise is Fun ~ Track Yours!, is included in this lesson[Resource 4.7].

Plenary Session

In this session, the teacher and children work together and discuss key messages of the lesson:

Data collected can be represented in different graphical formats.
Graphs can be created easily using ICT.
It is necessary to interpret graphical representations and to analyse the information given.
The data collected **must** be used for planning and decision making.

Extension work

- Children can investigate another aspect of health ~ Food and Nutrition. A daily list of the foods eaten at different times of the day can be recorded in tabular format. A food diary template has been included with this lesson [Resource 4.8].

- This list can be examined and children can clearly see which foods they eat most / least.

- Children can learn about food types and how they help. Lists of foods under each of the food groups can be examined e.g. proteins, carbohydrates, fats… A 'Food Group Matching Cards' Game has been included with this lesson [Resource 4.9]

- Children can examine the Food Pyramid and make drawings of foods they will include in their own diets using the Food Pyramid template included with this lesson [Resource 4.10].

- A 'Healthy Eating Plate' template [Resource 4.11] has been included with this lesson for children to create a delicious, healthy meal.

- It is important that children decide to take responsibility for making wise food choices and adopting a healthy, balanced diet.

Home/school links

- Discuss the steps in the Classroom Census process – explain how this census was conducted to your family [Key question chart or Investigation step cards could be used to help children sequence and retell]
- Use the graphs designed at school at home for discussion – interpret the data represented and make decisions with family members on how the data could be used e.g. to improve our health and well-being.
- Discuss with family members ways in which the amount of exercise taken daily or weekly could be increased.
- Teach those at home about the various food groups and which foods are included in each group. Design a Family Food Pyramid at home with family members.
- Create graphs on the computer using data collected at home e.g. Favourite Foods, Fruits we Eat, Favourite Sports…
- Visit www.cso.ie to look at the type of information that is gathered by the Central Statistics Office

Resource 4.1

Time Spent on Daily Activities

My 24-hour day

Activity	Hours Spent on Activity
Sleeping	
Eating	
School	
Travelling	
Doing homework	
Helping at home	
Reading	
Watching T.V.	
Playing games	
Exercising	
Computer Games	
Mobile Phone Use	
Other	
Total Hours	24 hours

- ☺ How many hours do you spend sleeping? _____
- ☺ What is the recommended number of hours for children to sleep? _____
- ☺ How long do you spend at school? _____
- ☺ Do you spend more time on passive or active tasks? _____
- ☺ List the activities you do that involve physical exercise.
- ☺ What is the total number of hours that you spend watching T.V. and playing? _____
- ☺ Do you think that there is a good balance between passive and active tasks in your daily routine? _____
- ☺ List any changes you would like to make to your daily routine:

Resource 4.2

Time Spent on Daily Activities – Block Graph

Hours Spent ↓													
10													
9													
8													
7													
6													
5													
4													
3													
2													
1													
	Sleep	Eat	School	Travel	Home-work	Helping out	Reading	T.V.	Games	Exercise	Computer Games	Mobile Phone Use	Other

Resource 4.3

Time Spent on Daily Activities – Bar Chart

Hours Spent ↓	Sleep	Eat	School	Travel	Home-work	Helping out	Reading	T.V.	Games	Exercise	Computer Games	Mobile Phone Use	Other
10													
9													
8													
7													
6													
5													
4													
3													
2													
1													

Resource 4.4

Time Spent on Daily Activities – Bar Line Graph

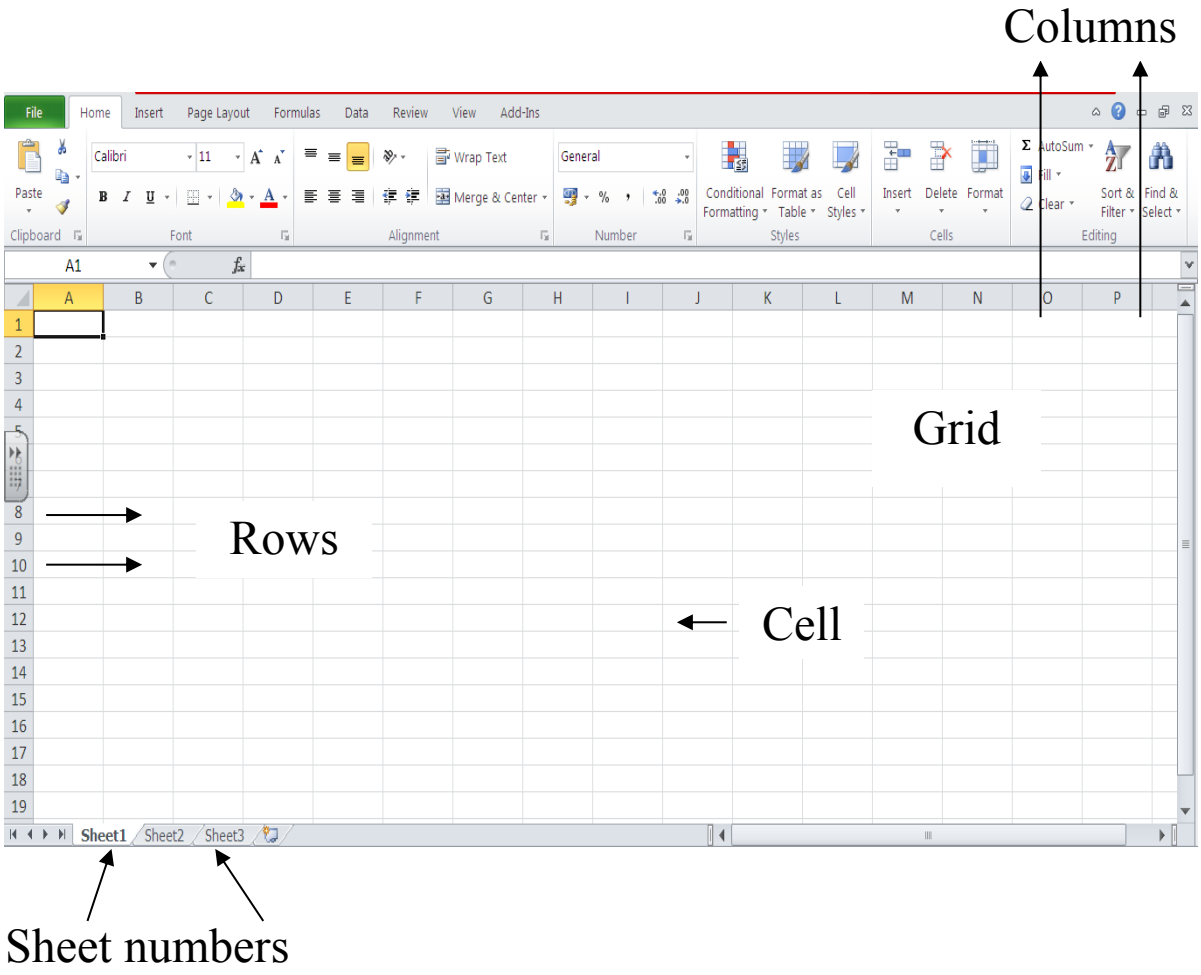
Hours Spent ↓	Sleep	Eat	School	Travel	Home-work	Helping out	Reading	T.V.	Games	Exercise	Other	Mobile Phone Use	Other
10													
9													
8													
7													
6													
5													
4													
3													
2													
1													

Creating Graphs on the Computer

Use a program called Microsoft Excel

- Click on Start
- Click on Programs
- Click on Microsoft Excel … wait for the program to open…

This is the screen you will see on your computer.



<u>Take some time to explore this screen:</u>

- Can you find the rows / columns?
- The entire sheet looks like a table / grid and each little box is called a cell.

Let's create a graph using the data you have collected

e.g.

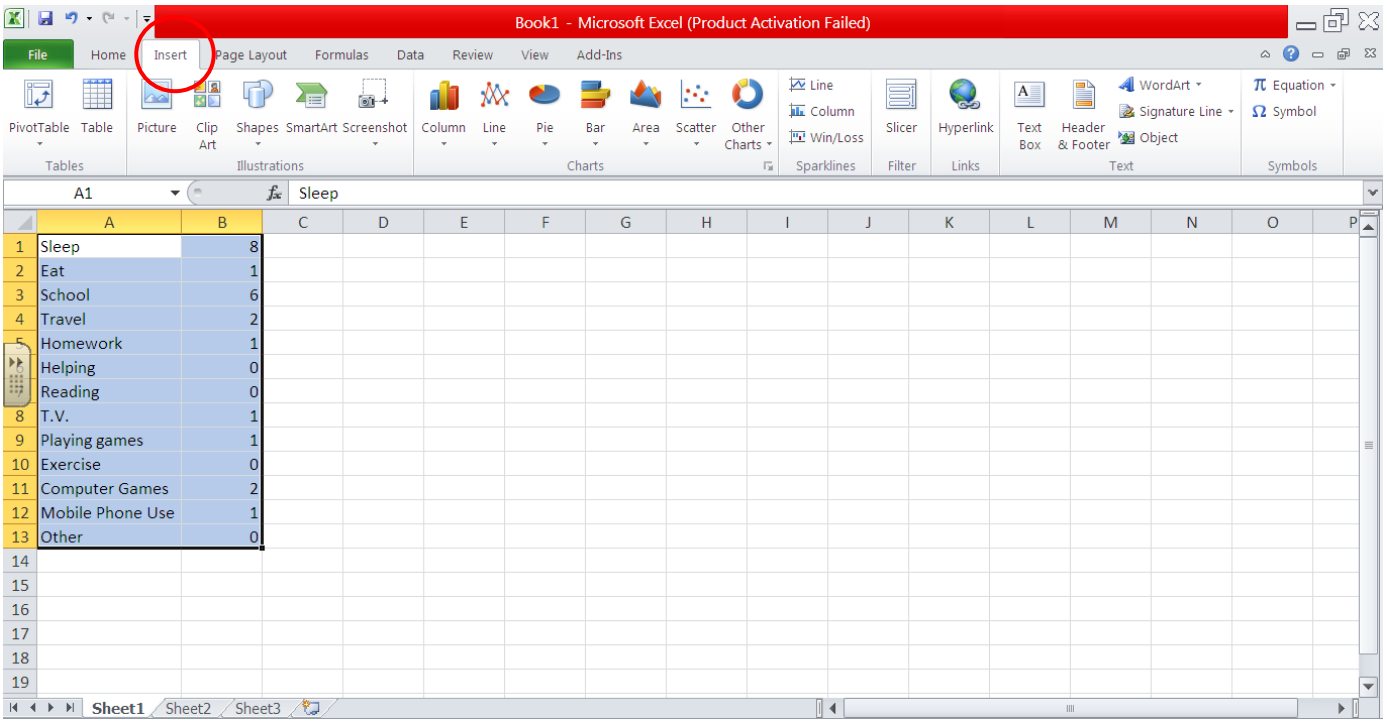
Time Spent on Daily Activities

To create a graph:

- Click into Cell A1 on the spreadsheet and type the word 'Sleeping'
- Click into Cell B1 and type in the number of hours you spend sleeping
- Click in to Cell A2 on the spreadsheet and type the words 'Eating'
- Click into Cell B2 and type in the number of hours you spend sleeping
- Continue in this way until you have entered all the data

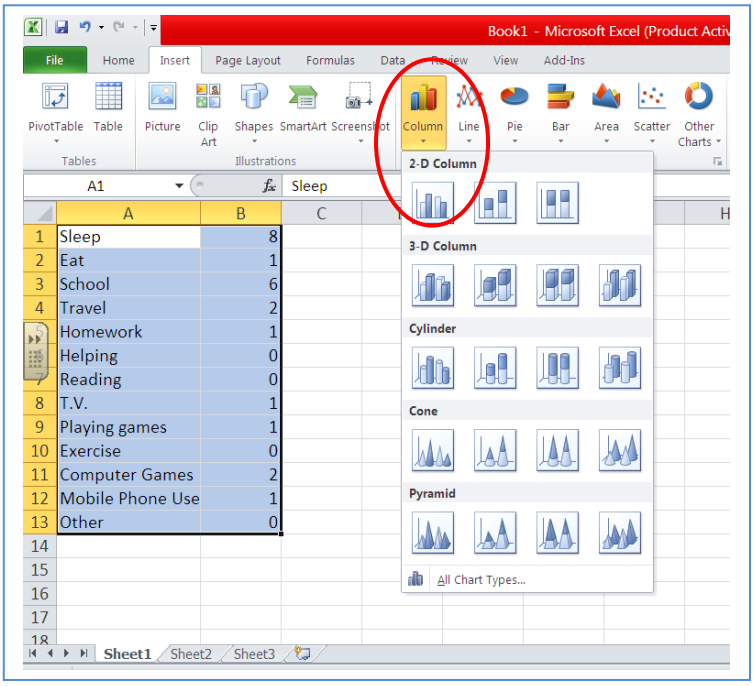
Now that you have all the data entered into the computer, it is time to create the graph

- Highlight the data you want to use for the graph.
- Click on the 'Insert' tab at the top of the screen.



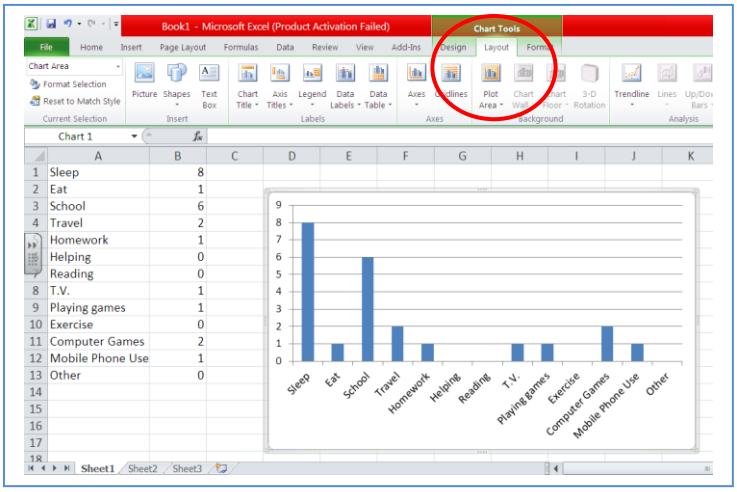
	A	B
1	Sleep	8
2	Eat	1
3	School	6
4	Travel	2
5	Homework	1
6	Helping	0
7	Reading	0
8	T.V.	1
9	Playing games	1
10	Exercise	0
11	Computer Games	2
12	Mobile Phone Use	1
13	Other	0

- Choose the type of graph you want the computer to create e.g. bar graph(column graph).



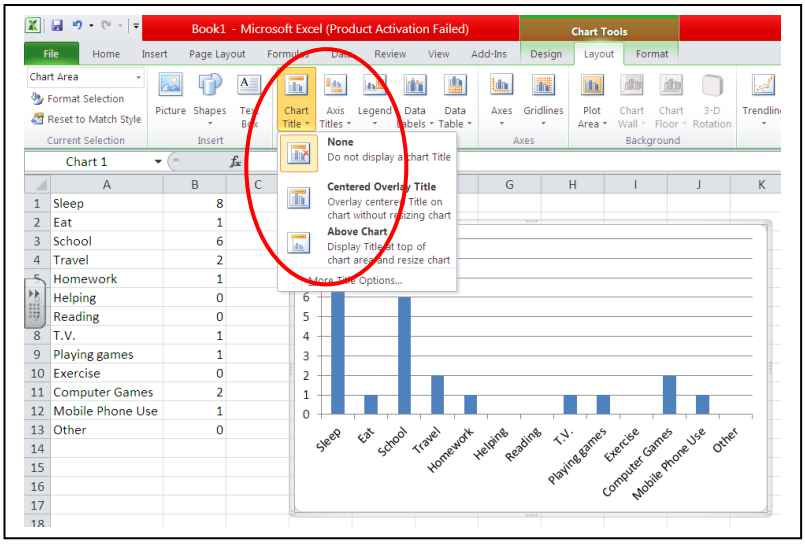
	A	B
1	Sleep	8
2	Eat	1
3	School	6
4	Travel	2
5	Homework	1
6	Helping	0
7	Reading	0
8	T.V.	1
9	Playing games	1
10	Exercise	0
11	Computer Games	2
12	Mobile Phone Use	1
13	Other	0

- To make any changes to the graph, click on the 'Layout' tab under 'Chart Tools' at the top of the screen.



	A	B
1	Sleep	8
2	Eat	1
3	School	6
4	Travel	2
5	Homework	1
6	Helping	0
7	Reading	0
8	T.V.	1
9	Playing games	1
10	Exercise	0
11	Computer Games	2
12	Mobile Phone Use	1
13	Other	0

E.g. To add a title to the graph, click on the 'Chart Title' icon and select where you want the title to appear.

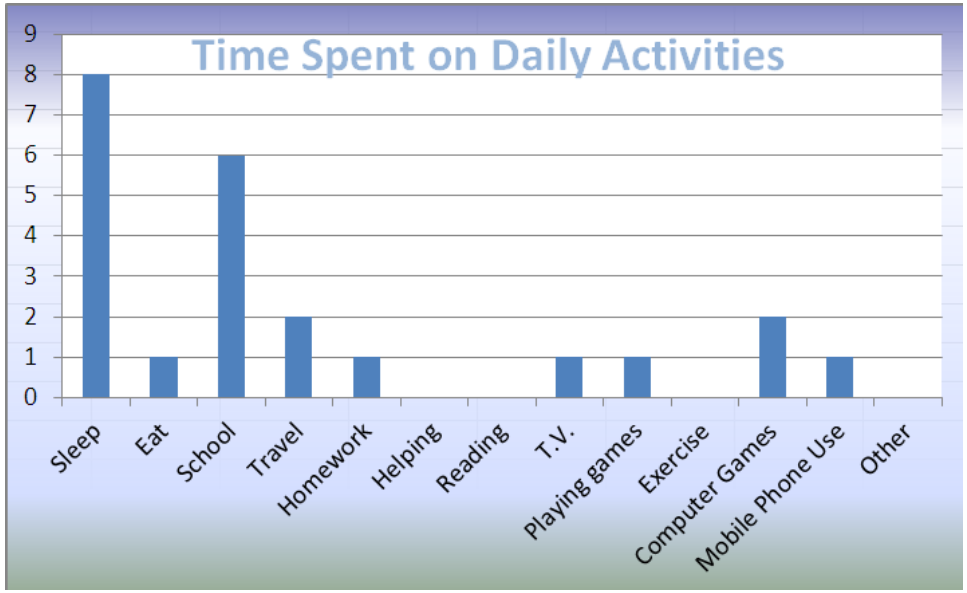


	A	B
1	Sleep	8
2	Eat	1
3	School	6
4	Travel	2
5	Homework	1
6	Helping	0
7	Reading	0
8	T.V.	1
9	Playing games	1
10	Exercise	0
11	Computer Games	2
12	Mobile Phone Use	1
13	Other	0

- Save and print all graphs created and display in the 'Census 2016' project board in the classroom.

Resource 4.6

How Healthy is Henry?



Here is a graph showing Henry's daily activities. Study the graph and answer the following questions.

How healthy do you think Henry is?

Very healthy †

Healthy †

Not very healthy †

Very unhealthy †

Give a reason for your answer:

_____

_____

How long does Henry spend sleeping? _____

Is this a good night's sleep? _____

How many hours a day does Henry spend watching T.V. and playing video games? _____

Is this a reasonable amount of time?_____

_____

How long does Henry spend reading? _____

How would reading be of benefit to Henry?

_____

_____

Recommend some titles that Henry would enjoy reading: _____

_____

Exercise is Fun ~ Track Yours!

Write in your activities!	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
15 minute Activity							
15 minute Activity							
15 minute Activity							
15 minute Activity							
Well done!							

What activities do you enjoy?

Food Diary

Meals / Snacks	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.	Sun.
Breakfast							
Break-time							
Lunch							
Mid-afternoon snack							
Tea							
Supper							
Other Snacks							

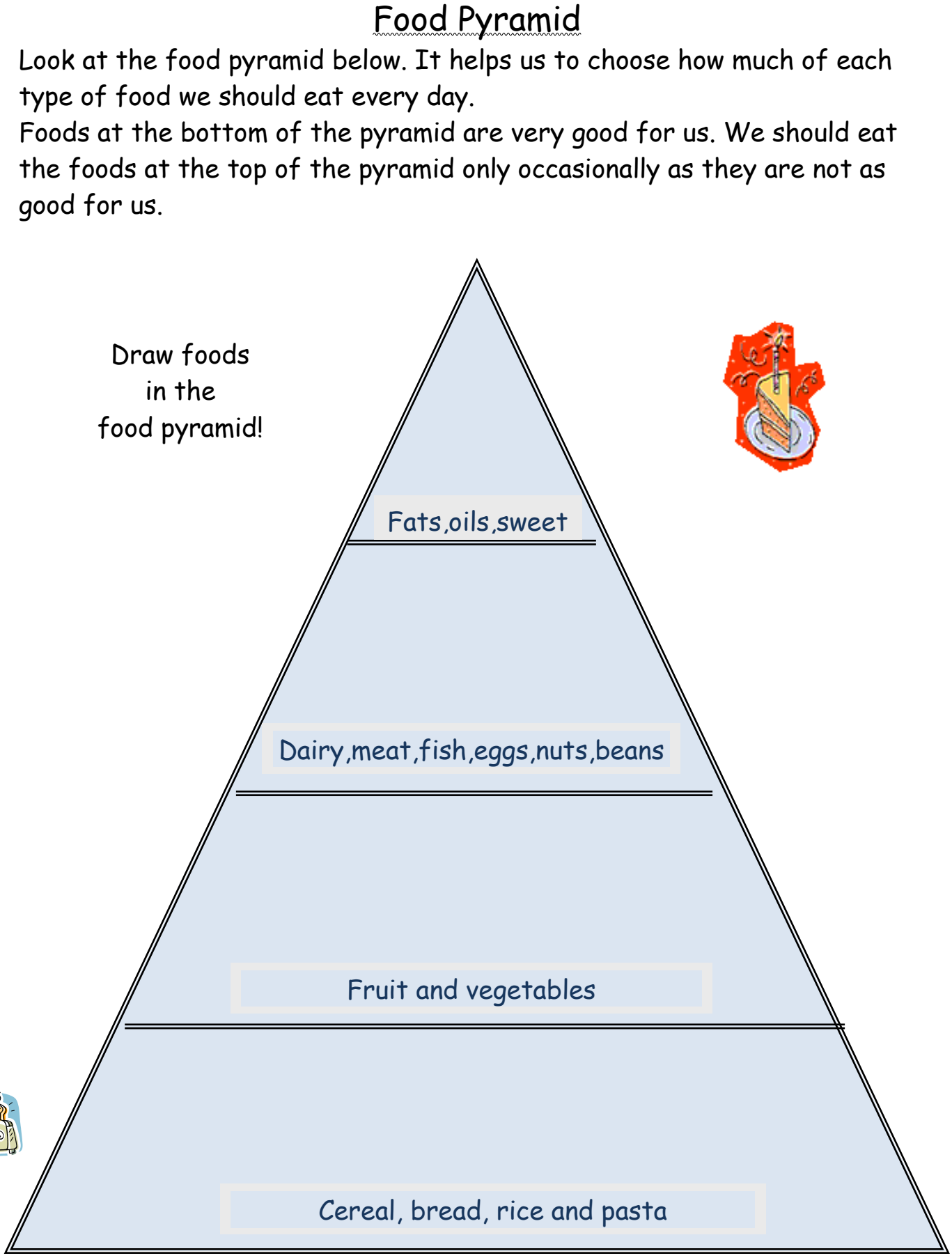
Food Group Matching Card Game

Food Group	How they help	Food types
Carbohydrates	Provide energy	Potatoes, rice, cereals, pasta, bread and some fruit and vegetables
Proteins	Help growth and repair	Meats, poultry, fish, dairy products, eggs and beans
Fats	Provide energy and help build up your body	Dairy products, red meats, some poultry and fish
Fibre	Help digestion	Cereals, fruit, bread and vegetables
Minerals	Iron is good for the blood. Calcium is good for teeth and bones. Magnesium is calming.	Fresh fruit and vegetables
Vitamins e.g. vitamin A, B, C, D, E	They are good for your skin, bones and teeth.	Dairy products (milk, eggs and butter), fresh fruit and vegetables.

Food Pyramid

Look at the food pyramid below. It helps us to choose how much of each type of food we should eat every day.
Foods at the bottom of the pyramid are very good for us. We should eat the foods at the top of the pyramid only occasionally as they are not as good for us.

Draw foods in the food pyramid!



Healthy Eating Plate

Think about what foods you could use to create a delicious healthy meal. Make a drawing of this meal on the plate below.