

The Impact of Diet on the Mood, Behaviour and Learning of Children. Dave Rex, Specialist Dietitian, Highland Council (david.rex2@highland.gov.uk)

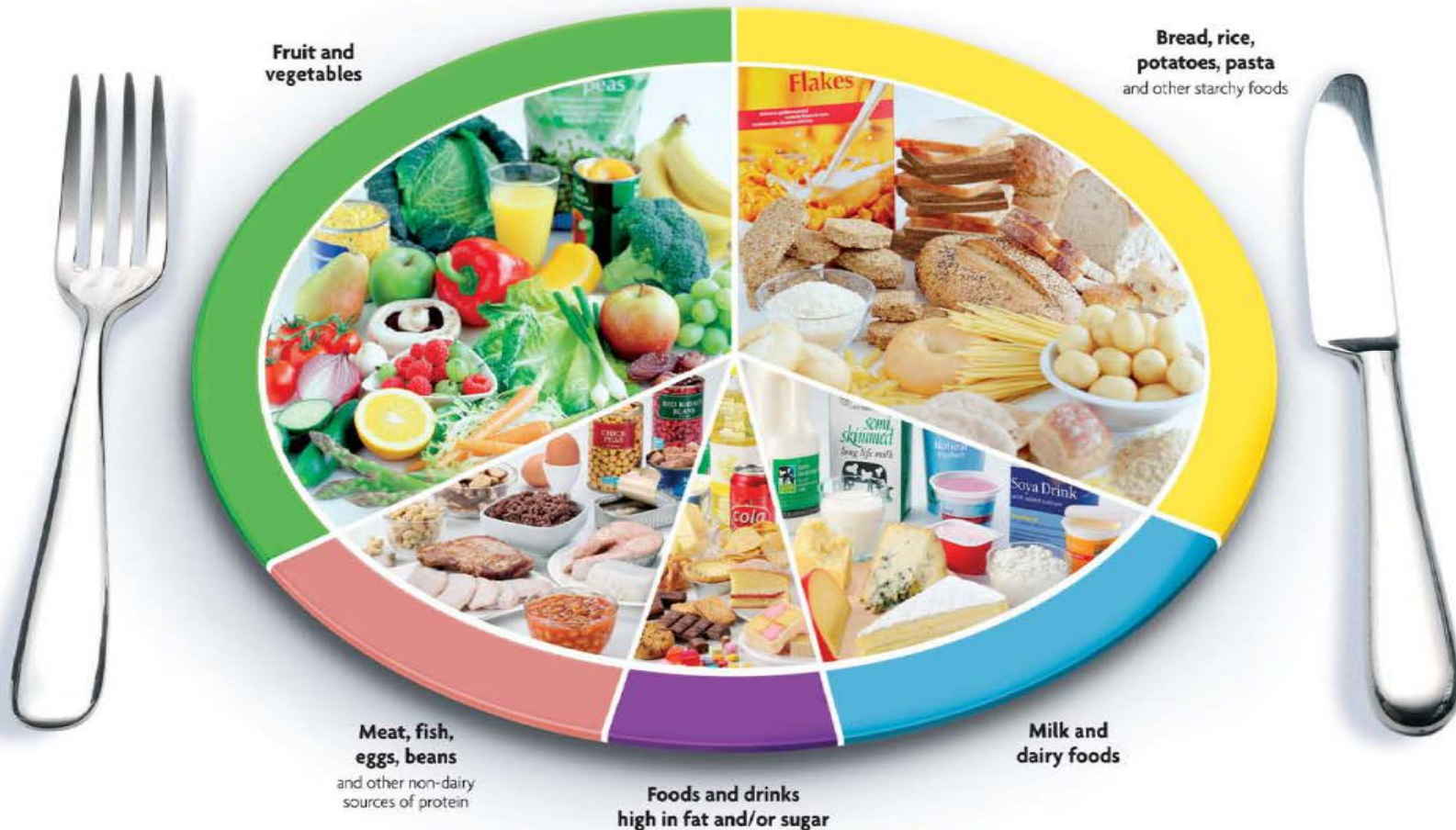
- Establishing links between diet & mood, behaviour and learning
- How school meals can help deliver public health objectives
- Theory into practice – connecting food provision & learning

School food & public health

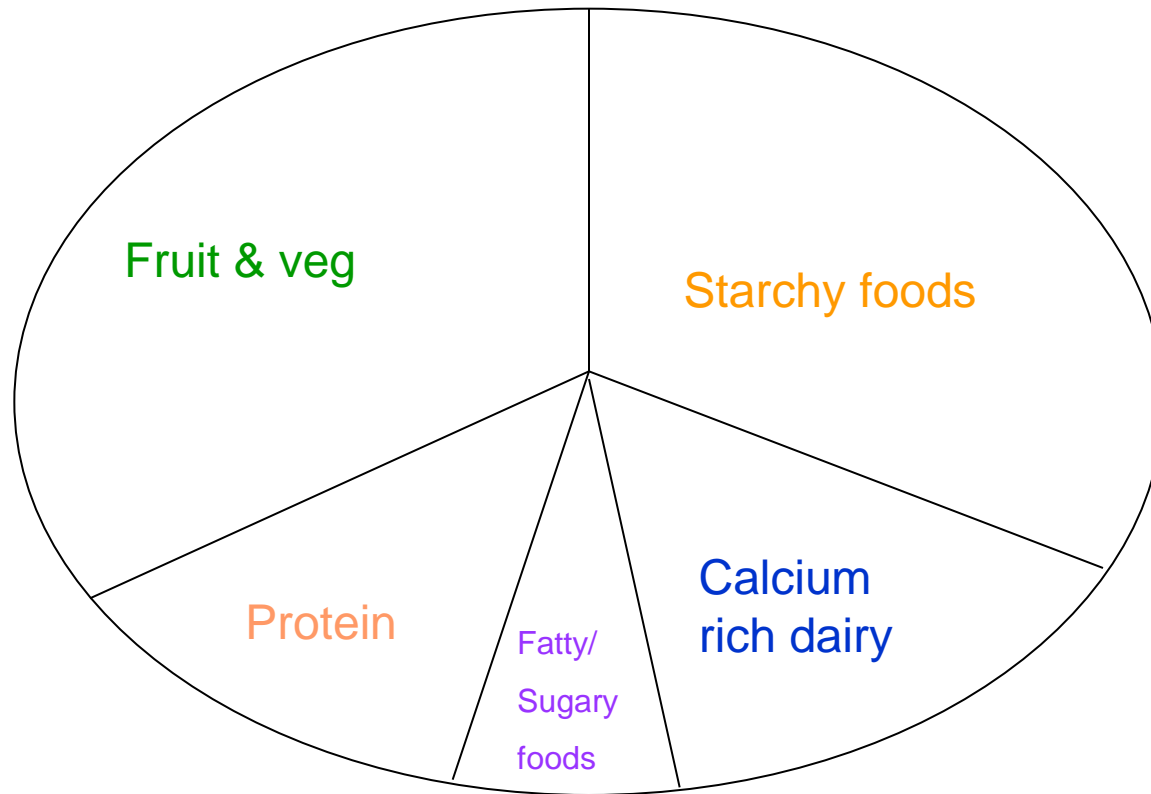
- What children & young people eat
- Why children eat the way they do
- How diet affects the brain
- Food & Health in the curriculum
- School meals vs alternatives
- Putting it all together

The eatwell plate

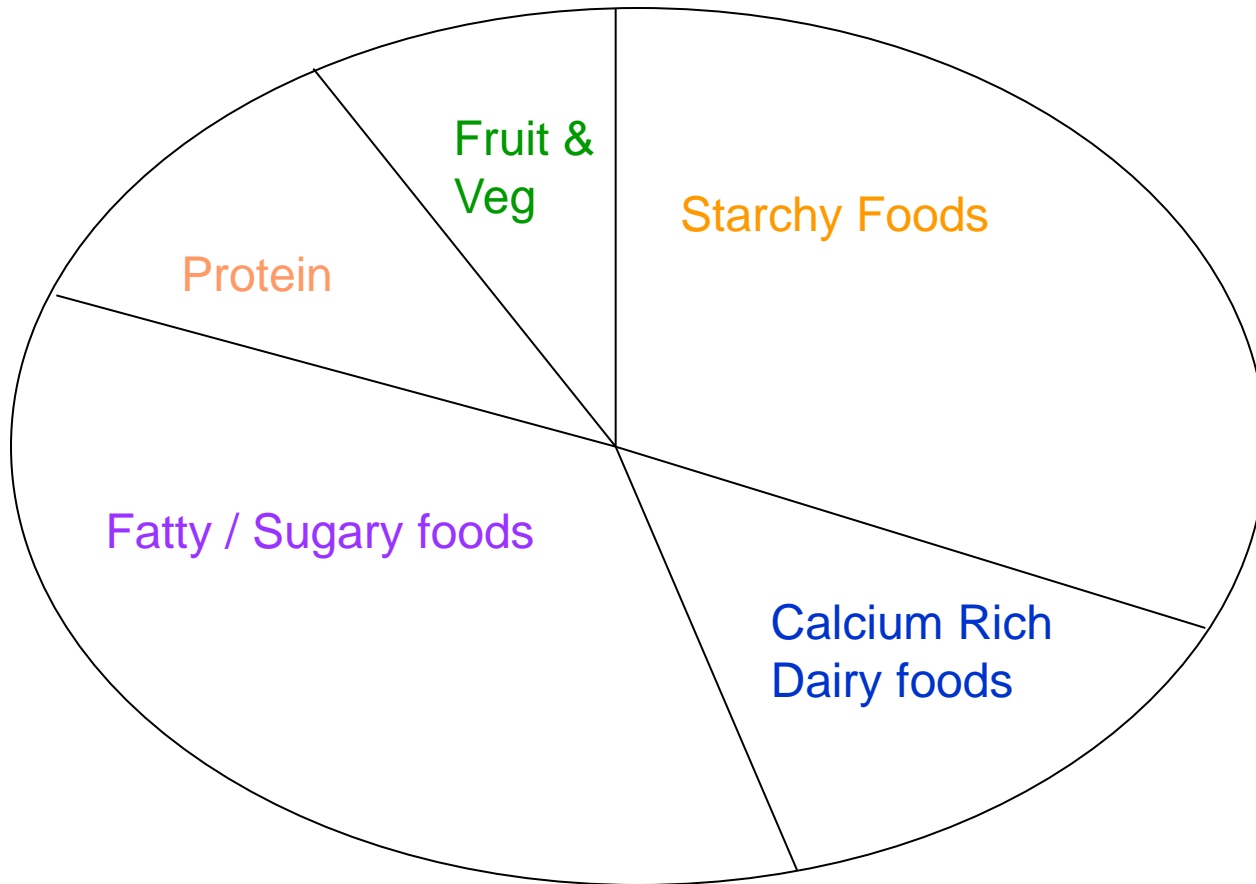
Use the eatwell plate to help you get the balance right. It shows how much of what you eat should come from each food group.



Healthy Eating guidelines

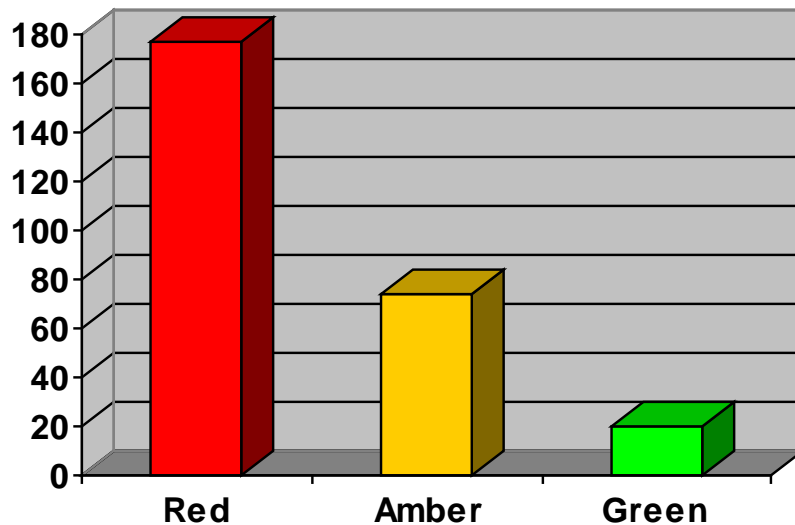


Typical for many children in Highland

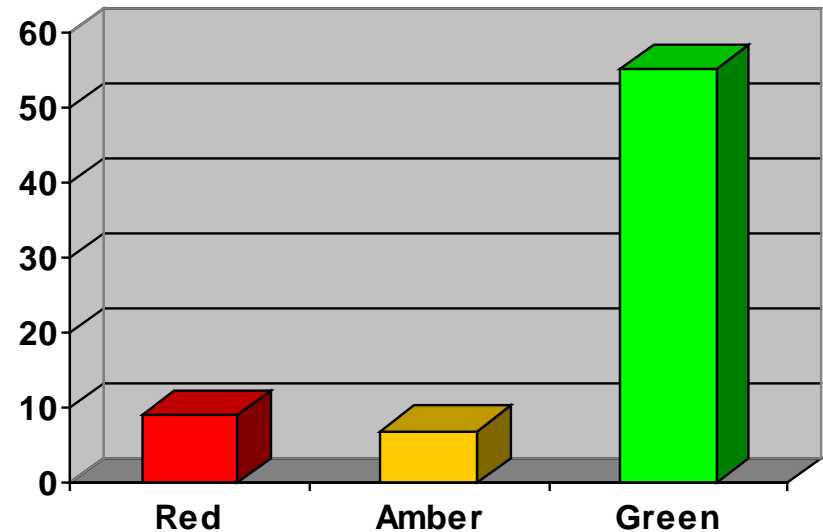


High school street food / school meal comparison

S2 High street food purchases



S2 School canteen purchases

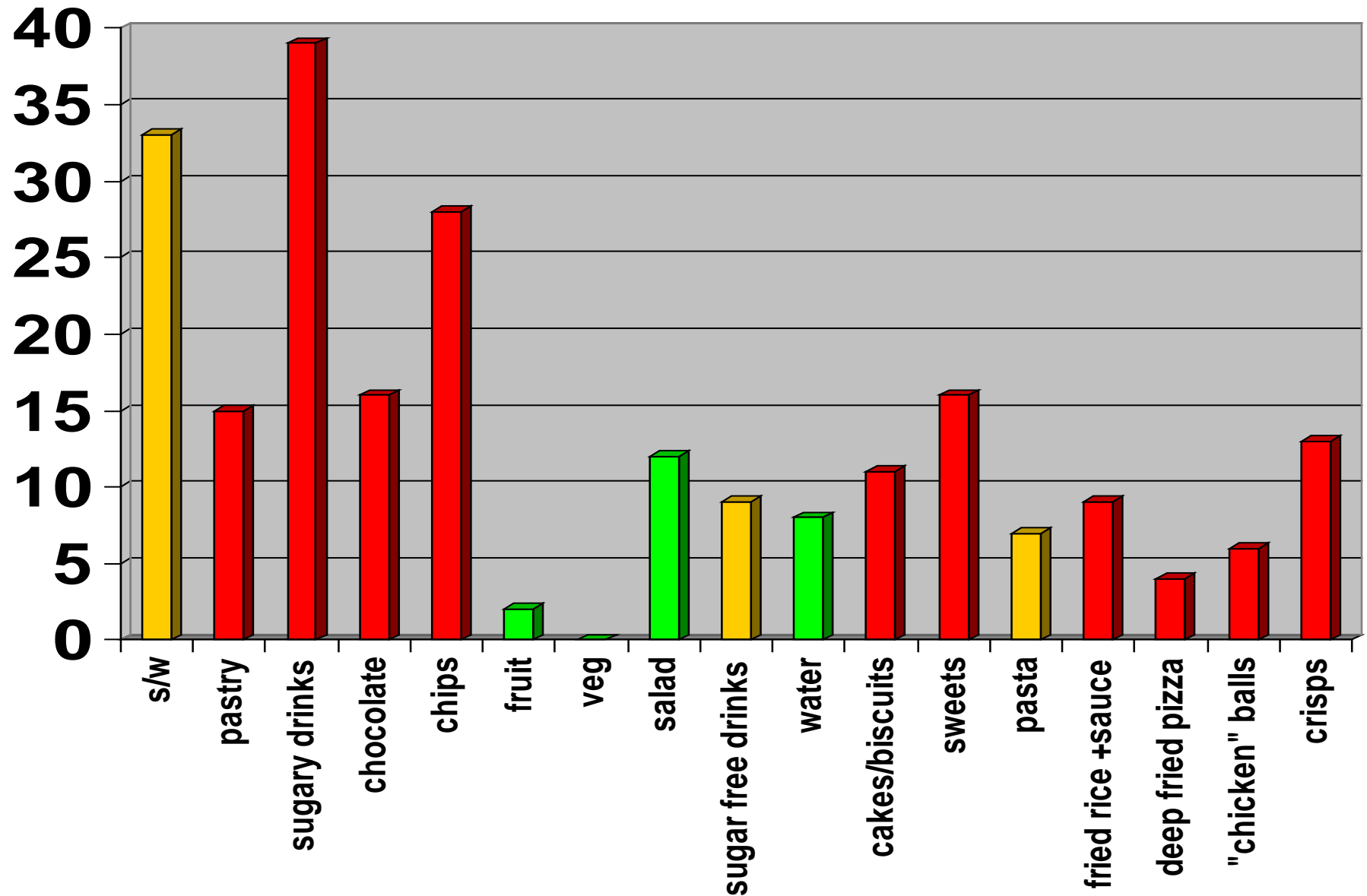


Red = High fat/sugar; Green = Foods with significant nutrients

Most popular High street drinks purchased: Irn Bru, MacB, Coke, Diet Coke

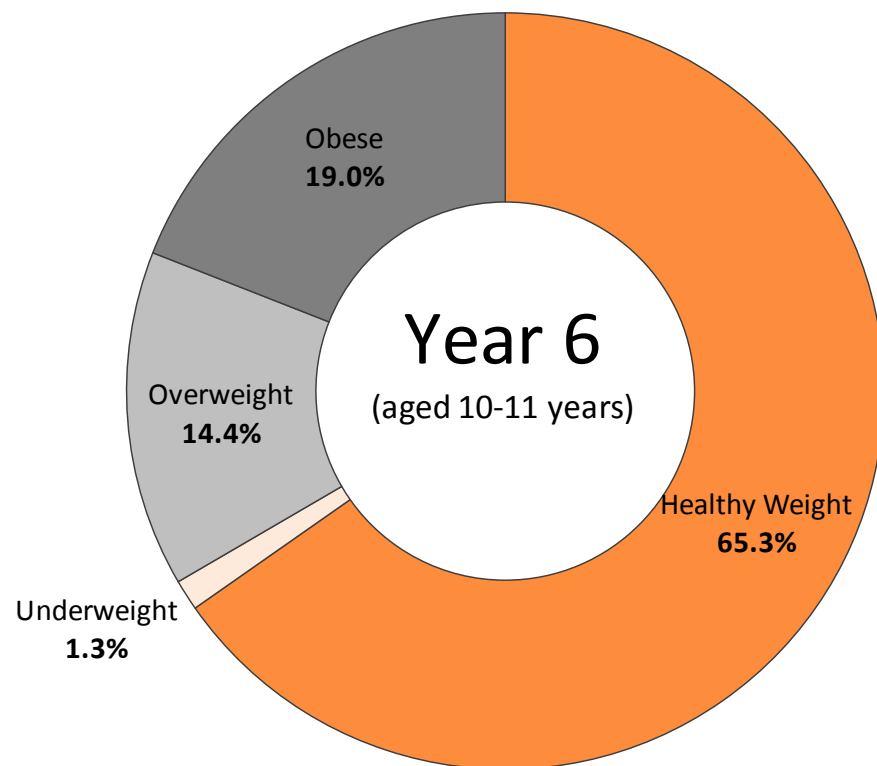
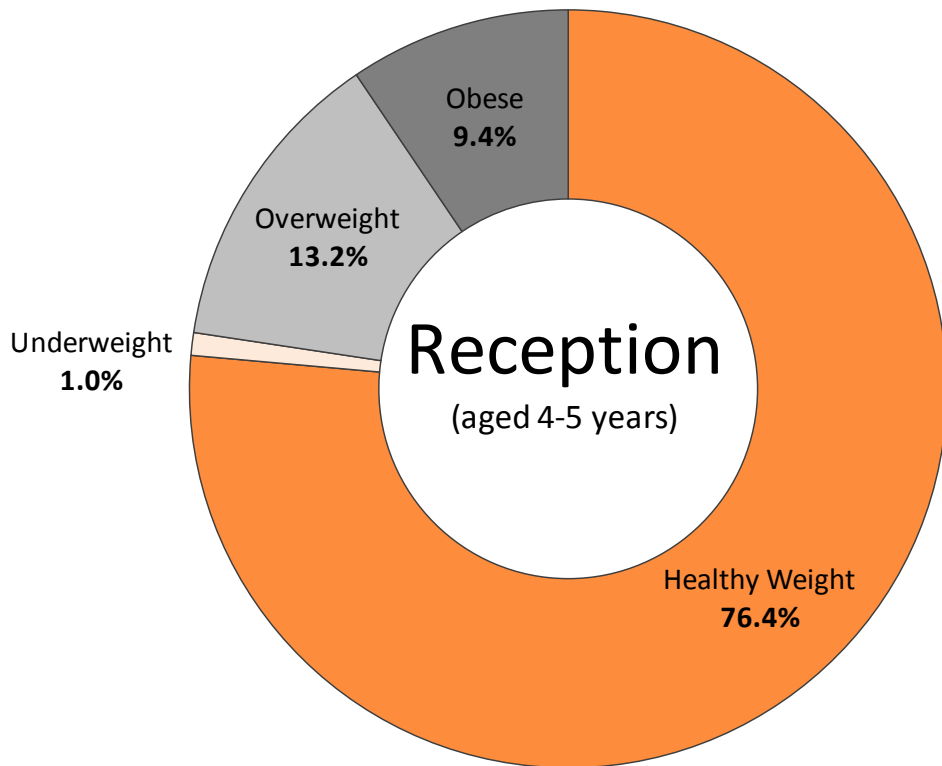
Most popular canteen drinks purchased: Pure fruit juice, water

High school S2 Street lunch choices



Child prevalence by BMI status

National Child Measurement Programme 2010/11



This analysis uses the 2nd, 85th and 95th centiles of the British 1990 growth reference (UK90) for BMI to classify children as underweight, healthy weight, overweight and obese. These thresholds are the most frequently used for population monitoring within England.

Focus on obesity ignores the inadequacy of many diets

What good for the body is good for the brain

Vitamin and mineral ***deficiency*** in 11 to 18 year old's diets from NDNS 2010

Vitamin / Mineral	% with very low / inadequate intakes (below LRNI)	Food sources
Zinc	13	Red meat, seafood
Potassium	22	Fruit, veg, potatoes
Iron	26	Red meat, fruit & veg, bread, cereals
Selenium	33	Seafood, vegetables
Magnesium	36	Vegetables, wholegrains, nuts

Diet & Brain Function



Eating regularly

Fibre vs Sugar

Iron

Magnesium

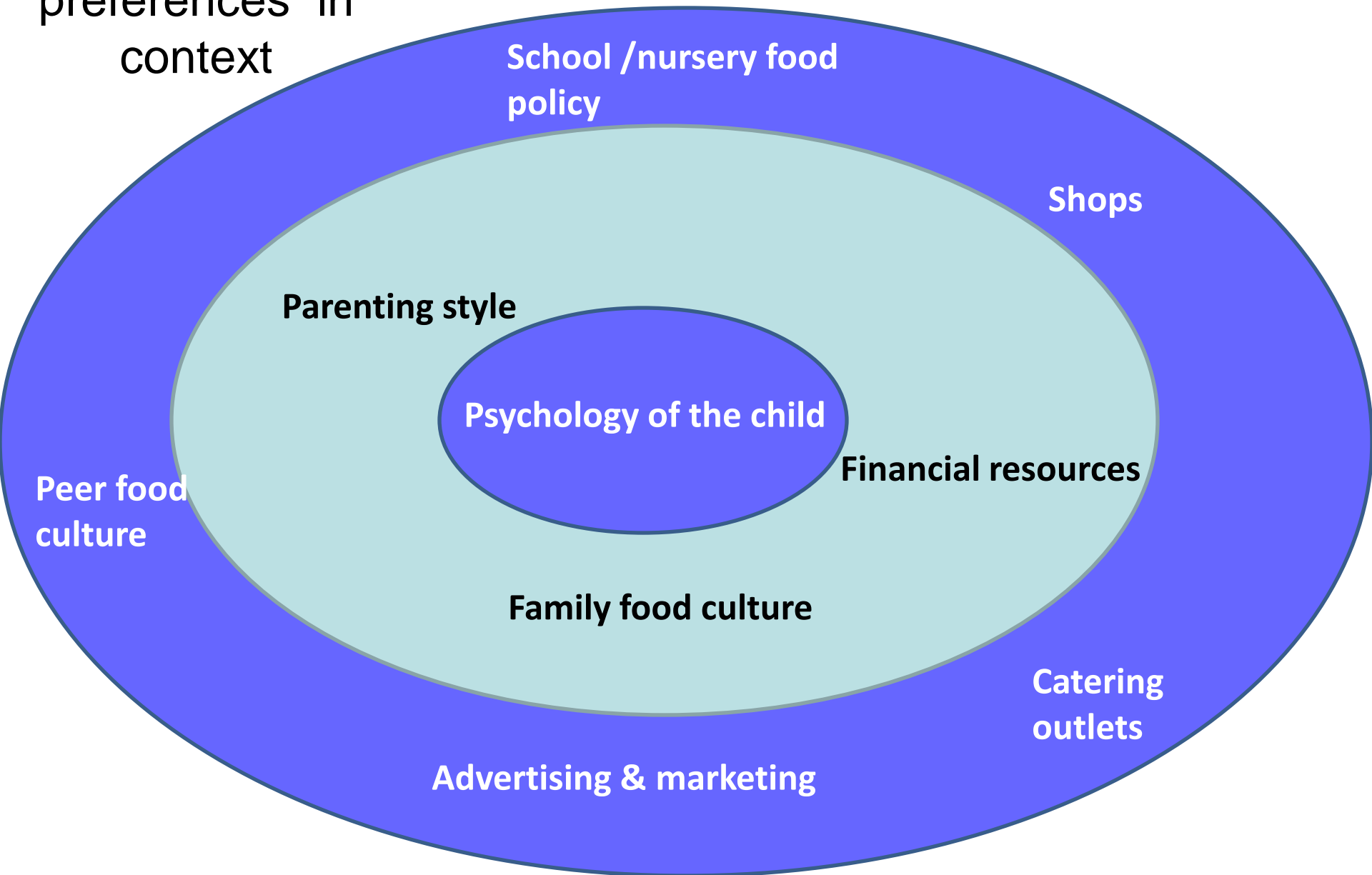
Zinc

Oily fish

Additives



Child Food preferences in context



The Eatwell Plate defined by sports sponsorship



What needs to change?

1. Children and their parents:

- Knowledge? “*Necessary but not sufficient*”
- How we **feel** – our emotional response to food
- What **skills** we have – Interpreting information, cooking, planning, parenting

2. The food environment:

- Availability
- Affordability
- Advertising and marketing

Educating children about Food & Health in school

- Balance food literacy and emotional literacy
- Cross curricular food & health work: Home Ec., Science, PSE, Social subjects, English....
- Political engagement in mapping, challenging and improving the food environment

Why school meals matter?

- Do as we do, not as we say
- Limited choice
- Modelling “balanced” choices
- Benefits of peer modelling
- Shared social experience

Examples from Highland schools.....

Taste the rainbow



Eatwell Plate



Protein

This helps us grow. Our muscles are made of this. Most people have something from this group at least twice a day. Examples are meat, fish, beans, eggs, lentils and nuts.

Dairy

Foods in this group are high in calcium. This makes our bones and teeth strong. Foods include milk, cheese and yoghurt.

Starchy Food

We need to eat a lot of these foods. Foods in this group include bread, rice, potatoes, pasta and cereals. They give us energy. Some of these foods are also high in fibre which keeps are intestines working properly.

Fatty & Sugary Food

To be in this group you must be really high in fat or sugar AND not contain much of anything that your body really needs. Examples are sugary drinks, crisps, butter, cream, sweets, chocolate, cakes and biscuits. We don't need to have any of these! It is ok to have a small amount. However, most people eat these foods to often.

Fruit & Veg

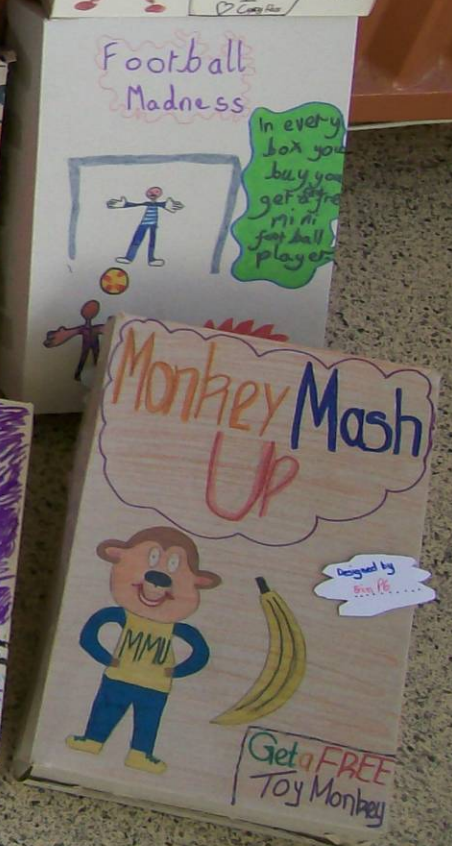
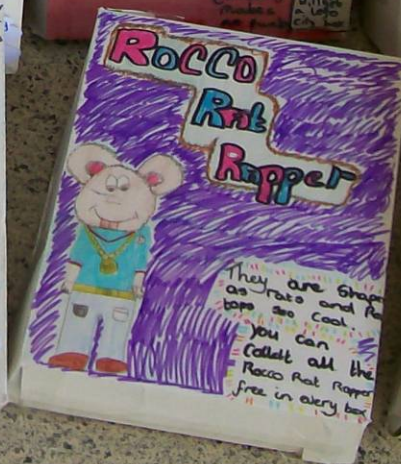
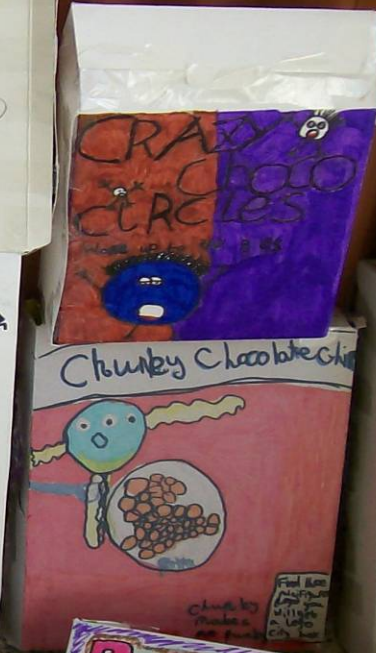
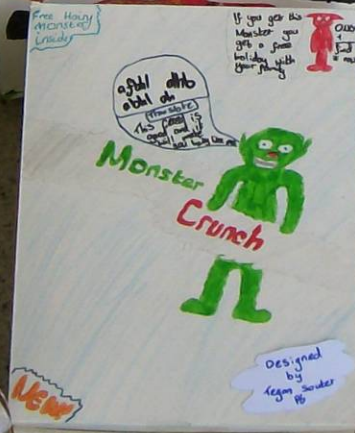
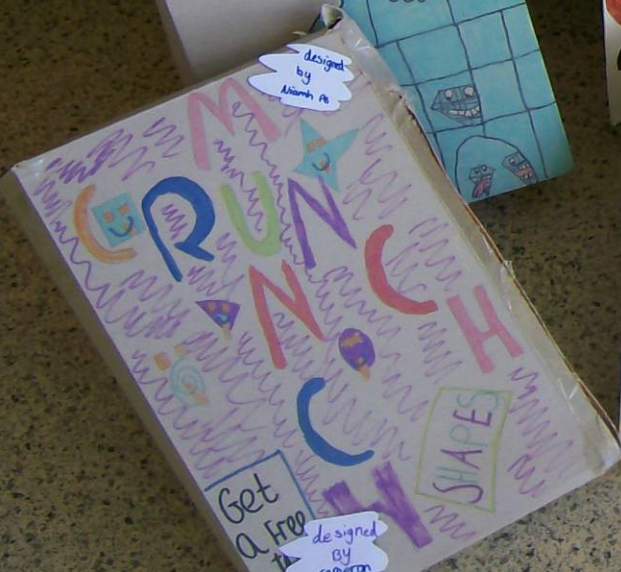
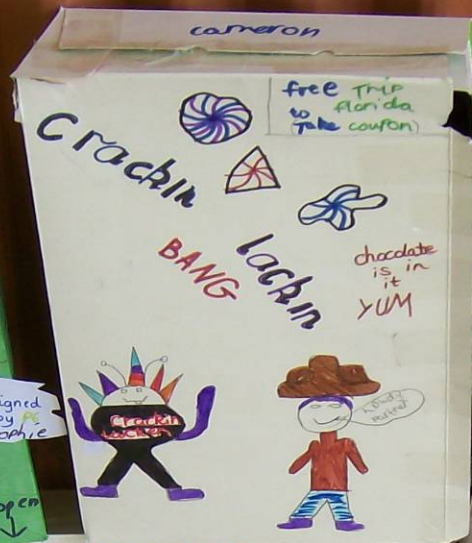
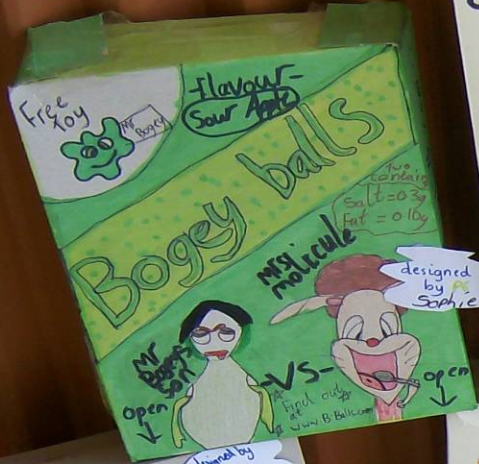
We need a lot of these foods to keep us healthy. We also need to eat as many different kinds as possible. They are essential for a healthy heart and stomach. Most people should eat more of these foods.

Fat vs sugar - cereal labelling



Breakfast cereals – Marketing brief





The eatwell plate

Fruit and
vegetables

Bread, rice,
potatoes, pasta
and other starchy foods

Meat, fish,
eggs, beans
and other non-dairy
sources of protein

Milk and
dairy foods

high
sugar

Ways to involve the catering in learning about Food & Health

- Tasting sessions
- Talking to pupils
- “*Rising Stars*” school meal/packed lunch evaluation
- Involvement in parent’s evenings
- School “picnics” and other special events

Involving the cook in curriculum learning





Potato wedges $\rightarrow 0$
Mixed veg $\rightarrow 1+$
cucumber $\rightarrow +1$
Lemon $\rightarrow +1$
tomato $\rightarrow +1$
fish fingers $\rightarrow +1$
Home made soup $\rightarrow +1$

⑥

“Give me 5” and “Rosey Parker Investigates”



Summary

- School food provision is a vital part of education and public health
- Diet has a major effect on children's mood & learning
- Catering services and teachers can work together