

A Snapshot Review of Rivington Foundations Primary School's Packed Lunches



Amanda Aitken

January 2014

1.0 Introduction

A brief 'snapshot' packed lunch audit was carried out at Rivington Foundation Primary School over 2 lunch times. The younger children eat their packed lunch in the hall and this audit was carried out on a Monday, the older children eat their packed lunch in year 5 & 6's classroom and this was observed on a Wednesday, both in late November 2013.

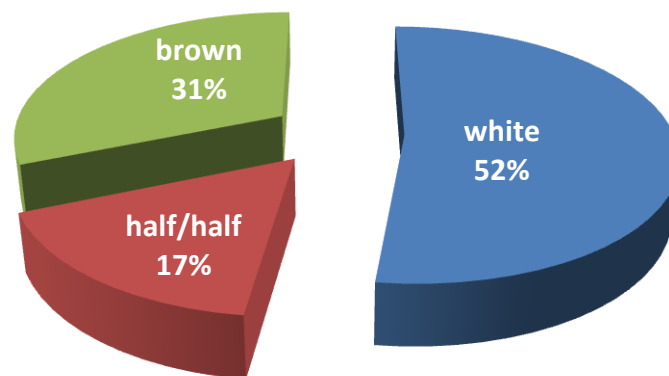
2.0 Results

2.1 Bread

Almost all the packed lunches were comprised of bread, more than half of the packed lunches had white bread sandwiches (52%) , followed by brown bread 31% and the least popular was half and half bread at 17%, see figure 1 below.

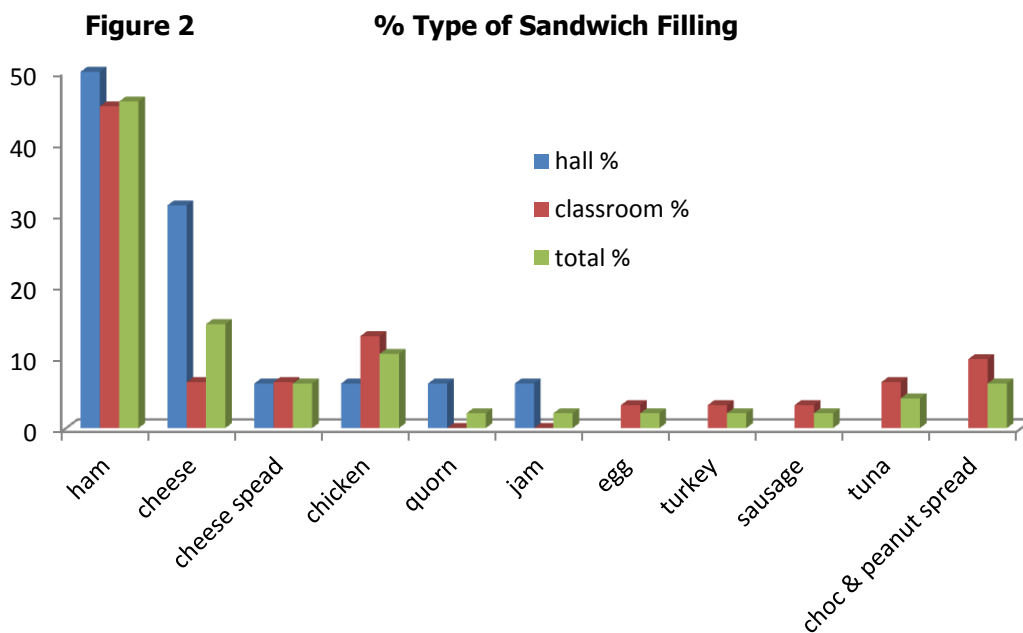
Figure 1

% Type of Bread



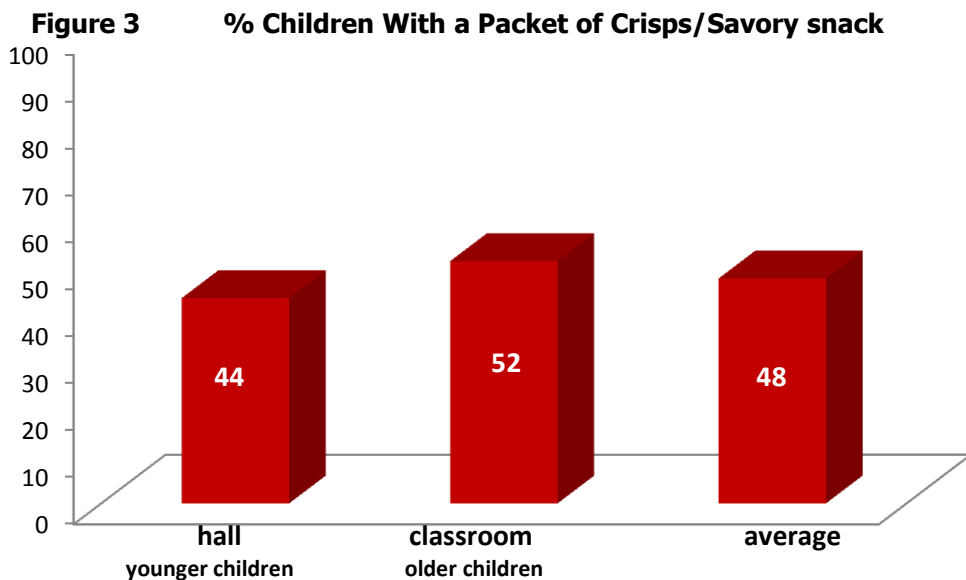
2.2 Sandwich Filling

Ham was the most popular sandwich filling over all; cheese was the 2nd most popular in the younger children and chicken was in the older children. In third place in the older children group was chocolate and peanut butter spread. Cheese spread was the 3rd most popular in the younger group and 5th in the older group (see figure 2), see figure 2.



2.3 Crisps/Savoury Snack

More than half of the older children eating their packed lunch in the classroom had a packet of crisps/savoury snack and 44% of the younger children in the hall. Resulting in an average 48% for the school, see figure 3.

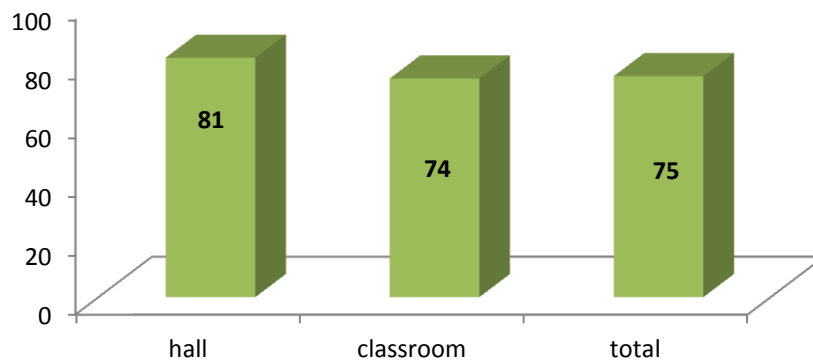


2.4 Fruit and Vegetables

2.4.1 Fruit

The children had wide variety of fruit, including dried, all percentages were more than **70%**, see figure 4 below.

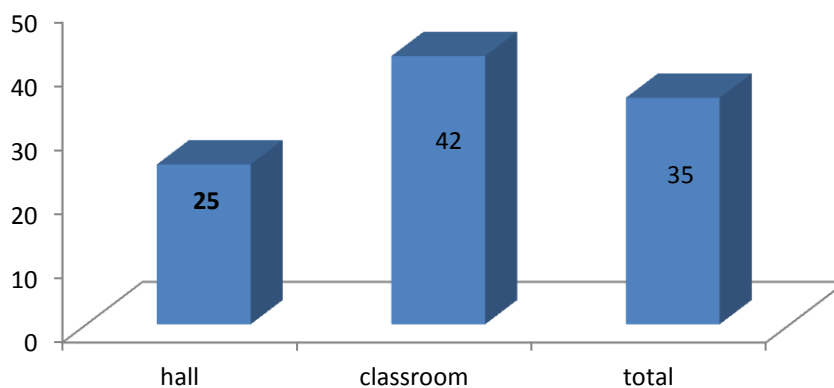
Figure 4 % Children with 1 or More Portion of Fruit



2.4.2 Vegetables

Overall the percentage per portion per child tended to lower than fruit. For the older children just over 40% had a portion of vegetable or salad, see below figure 5.

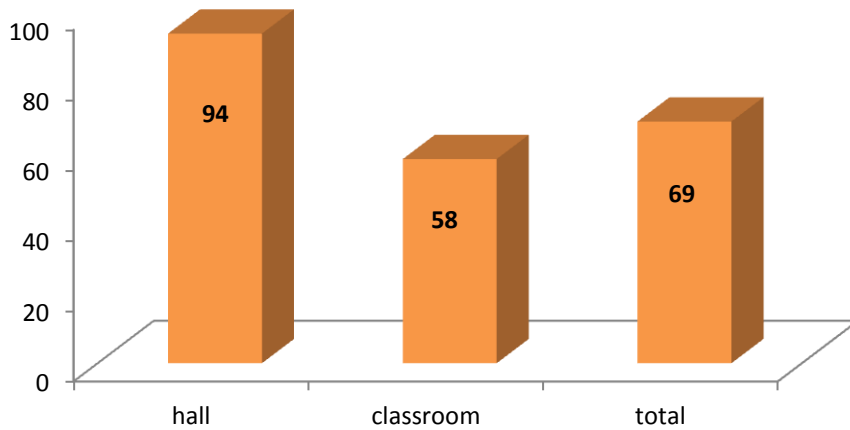
Figure 5 % Children That had a Portion of Vegetables/Salad



2.5 Dairy Foods

Just fewer than 70% of the total children had a portion of dairy in their packed lunch, see figure 6.

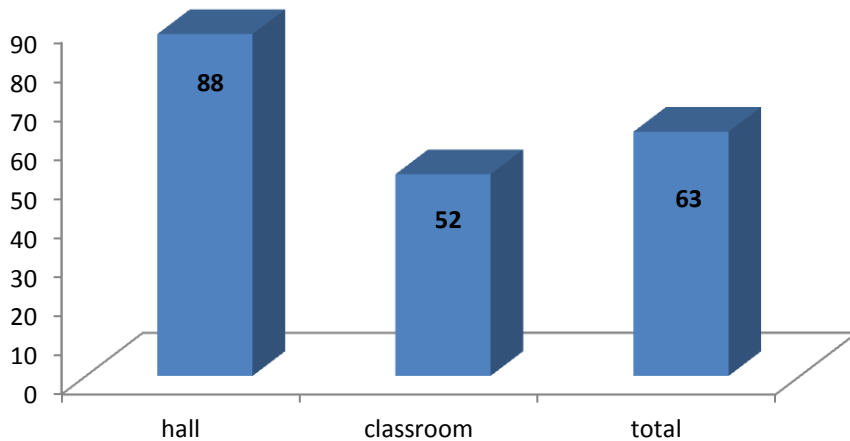
Figure 6 % of Children with a Portion of Dairy



2.6 Sweet Snacks

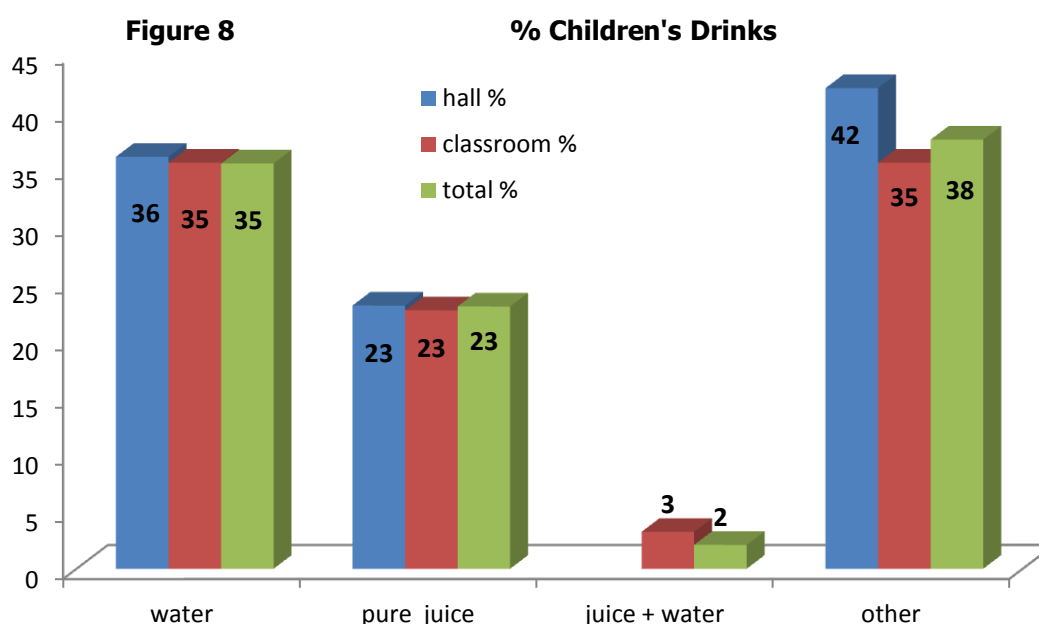
The audit included in the category sugary snack: anything chocolaty, cakes, cereal bars and sweet bread such as brioche. See figure 7 for the breakdown between the older, younger children and the whole school.

figure 7 % of Children That had a Sugary Snack



2.7 Drinks

Many of the drinks were in the childrens own containers so the researcher asked the children what they had to drink. For simplicity the drinks were grouped into water, pure juice, and juice diluted with water and other. 'Other' encompassed cordials, fruit shoots, Vimto and Ribena whether sugar free/no added sugar or with sugar, see figure 8.



3.0 Rivington's Packed Lunch Contents Compared To The Governments Department of Health Guidelines¹.

3.1 Bread/Starchy Carbohydrates

The Government's Department of Health (DH) guidelines based on the eatwell plate¹ (see appendix 1) advice that a meal should comprise of a 1/3 of starchy carbohydrates such as bread, pasta, rice potatoes a energy source. All the packed lunches observed at Rivington met that guideline. The DH's advice also states that brown, wholemeal or seeded versions of starchy carbohydrates will keep you fuller for longer, increase fibre intake and are more nutritious¹.

3.2 Sandwich Filling

The DH 'eat well' plate guideline is a portion of protein per meal, this can meat, fish, or a vegetarian option eggs, cheese, humous^{1&2}. Protein is the building blocks of body tissue, an energy source and nutrient source. Sandwich filling's are frequently the protein part of a packed lunch.

Chocolate and peanut butter spread. a source of protein from the nuts but is high in sugar (sugar =54.6g/100g Tesco everyday value choc spread)³, see appendix 2 for daily guideline amounts. Cheese spread can contain more salt than cheddar cheese and 'dairy lee' actual cheese content is 33%⁴. Chicken is an excellent low fat source of protein, pre-packed sliced chicken can contain added sugar, salt, various types of starch, stabilisers, vinegar and percentage chicken content can be as low as 61% (Tesco everyday chicken roll)⁵.

3.3 Crisps

DH's 'eatwell' plate suggests that foods that are high in fat, sugar and salt should be eaten occasionally, crisps tend to be high in fat and salt and fall into this category^{1&2}. Fifty two percent of the older children had a packet of crisps or a savoury snack and 44% of the younger children, resulting in an average for the school of 48%.

3.4 Fruit and Vegetables

We should aim to eat 5 **or more** portions of fruits or vegetables a day, this will provide vitamins and minerals essential for a healthy immune system and for growth and development. Guidelines suggest a portion of fruit and a portion of vegetables or salad should be part of a healthy packed lunch^{1&2}.

The children had wide variety of fruit all percentages were more than 70%, with the hall having the highest percentage of 81% and the whole school averaging at 75%. Over-all vegetable portion percentage per child (35%) tended to lower than the fruit portion percentage, with just over 40% of the older children having a portion of vegetables or salad.

3.5 Dairy

A portion of dairy should be included in a balanced packed lunch, dairy foods provide energy and calcium needed for healthy bones, teeth and nerve function^{1&2}. Just fewer than 70% of the total children had a portion of dairy in their packed lunch, again the children in the hall had a higher percentage of dairy (96%) than the older children in the classroom (58%).

3.6 Sugar

The 'eatwell' plate advice is that foods that are high in sugar should be eaten occasionally or as a treat and are not part of a healthy packed lunch^{1&2}. The younger children had the highest percentage of sugary snacks (88%) compared to the older children that ate their packed lunch in year 5 & 6 classroom (52%). Resulting in a school average of 63%. See Appendix 3 for the sugar content of popular snacks and drinks.

3.7 Drinks

Guidelines for childrens drinks are water, milk or pure fruit juice diluted with water^{1,2&6}. About a third of the children had water and no one had milk to drink. Just below a quarter of the children had pure juice and over 40% had 'other drinks'. It is important that children stay hydrated, just 2% dehydration can cause lack of concentration. The gold standard drinks for children is water or milk as they do not damage teeth or increase children's risk of dental decay. Although diluted fruit juice or sugar free cordials are acceptable with meals, milk or water are the better choices to avoid the children developing a sweet tooth. Pure fruit juice (including from concentrate) do provide vitamins such as vitamin C but they also contain fruit sugar 'fructose' and are acidic both of which can cause tooth decay and encourage a sweet tooth. Avoid fruit juice drinks – these are not the same as fruit juice. Products labelled as fruit juice drinks generally contain only a small proportion of fruit juice with water and added sugar, and provide little nutritional value⁷. Check the ingredient list on product labels and avoid products containing added sugar, see appendix 3 for sugar content of popular drinks.

4.0 Summary

4.1 Positive Points

- ✓ Nearly all the children had a least 1 portion of fruit with their packed lunch, most had a protein food as a sandwich filling.
- ✓ Just under half of the children had 'non-white' bread.
- ✓ Just over 70% had a dairy portion.
- ✓ Over third of all the children had water to drink.

4.2 Healthy Swap Suggestions

- Swap white bread to half and half, brown, wholemeal or seedy versions
- Swap high sugar sandwich fillings (jam/ chocolate spread) to protein foods such as ham, tuna, chicken, egg or cheese.
- Swap sugary snacks for fruit (dried and tined are good for a change)
- Swap sweet snacks for fruit breads, scones or cereal bars.
- Swap cordials, fruit shoots, vimto and ribena's etc for water or milk, see appendix 4.

4.3 Include More Vegetables and /or Salad

- Add crudities (sliced cucumber/carrot) or salad to your lunch box

4.3 Foods to Include Less Often

- ✓ Crisps , introduce crisp Fridays or every other day to initially
- ✓ Sweet snacks, introduce chocolate Fridays
- ✓ Drinks other than water or milk

4.4 Artificial Sweeteners & Food Preservatives

Artificial sweeteners or colours are not permitted to be added to foods designed for infants and young children (0-5yrs)⁸. Food and drinks labelled as 'low sugar', 'reduced sugar', 'sugar free', 'no added sugar' or 'low fat' as they are often sweetened using artificial sweeteners, such as:

- aspartame (E951)
- saccharin (E954)

- sorbitol (E420)
- acesulfame K (E950)
- sucralose (E955)

The Food Standards Agency (FSA) advises that the colours and preservatives listed below may affect behaviour in some children, and that eliminating certain artificial colours from their diets might have some beneficial effects on their behaviour ⁹. Where products contain any of the colours listed below, they are required to carry the warning 'may have an adverse effect on activity and attention in children'. Some manufacturers have already removed these colours from their products ⁷.

Food additives:

Preservatives to avoid:

- Sodium benzoate (E211)

Colours to avoid:

- Tartrazine (E102)
- Quinoline yellow (E104)
- Sunset yellow (E110)
- Carmoisine (E122)
- Ponceau 4R (E124)
- Allura red (E129)











5.0 Marketing Can Be Misleading,

Watch out for other names for sugar such as: fructose, lactose, sucrose, dextrose, corn syrup, galactose, glucose, honey, invert sugar, malt, maltose, Maple syrup, Molasses, Muscovado or Barbados Sugar.

Avoid fruit juice drinks – these are not the same as fruit juice. Products labelled as fruit juice drinks generally contain only a small proportion of fruit juice with water and added sugar, and provide little nutritional value.

6.0 An Example of a Primary School Policy

Hunslet Moor Primary School, Durham.

| | |
|--|---|
| <p>Choose something from each of the 4 food groups, add a drink of water and away you go!</p> | |
| <p>1. Fill you up foods Use bread or pitta to make a sandwich. This will fill you up and give you energy. Other examples are: samosas, pakoras, wraps, pasta salad.</p> |  |
| <p>2. Tasty fillings Meat, fish and eggs are a good source of protein and taste great in sandwiches. Protein will help your children grow. Other tasty fillings can include cheese spread, salad, tuna, chicken and ham.</p> |  |
| <p>3. Dairy Delights Milk, cheese and yoghurt provide calcium. Calcium will help your children's bones to grow strong. Other examples are cheese strings, dairylea triangles.</p> |   |
| <p>4. Feeling Fruity Eating 5 portions of fruit and vegetables everyday will help you to stay fit and healthy. Examples of these include apple, banana, pear, satsuma.</p> |    |
| <p>Eat Less Treats Foods such as crisps, chocolate, sweets and cakes are treats. It's ok to have treats every now and again, just try not to eat them every day! You can replace these with things such as baby tomatoes, grapes, raisins, carrots and celery sticks.</p> |   |
| <p>Think Water! You don't need to bring your own drinks. Water will be provided for you at lunch time. You need to drink 3-4 big cups of water a day.</p> |   |

Head teachers reply when asked how the parents took to the packed lunch policy: "This gives guidelines on the sort of foods which should be included, and bans the inclusion of crisps, chocolate or any kind of drink other than water with the exception Fridays when children may have one savoury crisp type snack and one item containing chocolate. Parents were not happy about this at first but they are all used to it now and obey the guidelines"

7.0 Final Comments

Evidence from research suggests that childrens food habits and tastes affect their lifelong preferences and to develop a healthy food choice at a young age can only be a benefit to themselves as children and later as adults¹¹. There have been many links made between diet and health and a poor diet is a risk factor for ill health¹².

Promoting healthier food habits and preferences is a challenging task and has to be met with tact and diplomacy. The School Food Plan¹³ reports that packed lunches are generally less nutritious than school dinners, therefore the aim of this report is not to encourage the uptake of packed lunches but to identify what the packed lunches contain and to suggest healthier options/swaps, (see section 4.2) as part of a healthy packed lunch guide. Furthermore, it may be more effective to implement/trial a healthy lunch box guide to new children & parents initially or just to the younger years.

7.0 References

1. Department of Health. Eatwell plate
www.nhs.uk/Livewell/Goodfood/Pages/eatwell-plate.aspx
2. Children food trust. Packed lunch policy template.
http://www.childrensfoodtrust.org.uk/assets/packed-lunches/example_template_packed_lunch_policy.pdf
3. Tesco
<http://www.tesco.com/groceries/Product/Search/Default.aspx?searchBox=value+chocolate+spread&newSort=true>
4. Dairy Lea. [http://www.dairy Lea.co.uk/dairy Lea2/page?siteid=dairy Lea2-prd&locale=uk&PageRef=648](http://www.dairylea.co.uk/dairy Lea2/page?siteid=dairy Lea2-prd&locale=uk&PageRef=648)
5. Tesco. <http://www.tesco.com/groceries/product/search/default.aspx?searchBox=sliced+chicken&newSort=true&N=4294743586>
6. The Caroline Walker trust. Eating well a practice guide 5-11yr olds. CHEW
<http://www.cwt.org.uk/pdfs/CHEW-5-11Years-PracticalGuide.pdf>
7. Eat better start better. Voluntary guide for early years settings in England.(2012) Childrens food trust eat better start better.
<http://www.childrensfoodtrust.org.uk/pre-school/resources/resources>
8. Sweeteners in Food Regulations 1995, as amended 1996, 1997, 1999, 2001 and 2002; EU Council Directive 89/398/EEC colours in Food Regulations 1995, as amended by the Colours in Food (Amendment) Regulations 2000 and 2001; Miscellaneous Food Additives Regulations 1995, as amended 1997,

1999, 2001a and 2001b. (from Eat better start better. Voluntary guide for early years settings in England.(2012) Childrens food trust eat better start better)

9. Food Standards Agency (2007)
www.food.gov.uk/news/pressreleases/2007/sep/colours
10. Public Health England. (2013). *Child Health Profile, Lancashire*. London: Child and Maternal Health Observatory working with North West Public Health Observatory, part of Yorkshire and Humber Public Health Observatories on behalf of the Public Health Observatories in England. Retrieved from <http://www.chimat.org.uk/resource/view.aspx?RID=101746®ION=10162>
11. Fisk, C. M., Crozier, S. R., Inskip, H. M., Godfrey, K. M., Cooper, C., & Robinson, S. M. (2011). Influences on the quality of young children's diets: the importance of maternal food choices. *British Journal of Nutrition*, *105*(2),
12. Sofi, F., Cesari, F., Abbate, R., Gensini, G., & Casini, A. (2008). Adherence to Mediterranean diet and health status: meta-analysis. *The British Medical Journal*, *337*(sep11 2), a1344-a1344. doi: 10.1136/bmj.a1344
13. The School Food Plan (2013). Dimbleby. H. & Vincent. J. Crown copyright.

8.0 Appendices
Appendix 1

Vegetables or some salad **plus** a portion of fruit.
Chop up raw carrots peppers or cucumber.
Fruit ideas: dried apricots dates raisins or fresh tangerines, pears, sliced melon/pineapple, berries, bananas, plums.....

A balanced packed lunch should contain:



1/3 Starchy foods. Bread (bagels, pitta bread, wraps, muffins and baguettes), use brown, wholemeal or seeded bread, **(not white bread)** bread sticks, wholemeal crackers or rice, potatoes,

A portion of protein foods. These are meat, fish, eggs, beans, humous, soya or lentils

A dairy item. This could be cheese, cottage cheese, milk, fromage frais or yoghurt.

Replace with fruit & dried fruit, save for special treats

(source: Adapted from Department of Health, Eatwell plate www.nhs.uk/Livewell/Goodfood/Pages/eatwell-plate.aspx)

Appendix 2

Guide Line Daily (GDA) Amount For Children Aged 5-10 Years

| GDA | Children 5-10 yrs |
|--------------|--------------------------|
| Calories | 1,800 |
| Protein | 24g |
| Carbohydrate | 220g |
| Sugars | 85g |
| Added sugar | 50g |
| Fat | 70g |
| Saturates | 20g |
| Fibre | 15g |
| Salt | 4g |

Appendix 3

| Food/drink | Portion Size | Sugar (g) per portion | No.of sugar cubes per portion |
|--|---------------------|------------------------------|--------------------------------------|
| Coca Cola | 330ml can | 34.98g | 7 |
| Diet Coke | 330ml can | 0g | 0 |
| Fruit shoot (Apple/blackcurrant) | 200ml bottle | 22g | 4.5 |
| Fruit shoot - Low Sugar (Apple/blackcurrant) | 200ml bottle | 1.6g | 0.3 |
| Tropicana original smooth orange juice | 250ml glass | 25g | 5 |
| Innocent smoothie (strawberry/banana) | 250ml glass | 26g | 5 |
| Orange | 1 whole | 8.5g | 1.5 |
| Tinned fruit in fruit juice | 100g portion | 10g | 2 |
| Tinned fruit in syrup | 100g portion | 15g | 3 |
| Raspberry flavoured jelly | 125g pot | 23.25g | 4.5 |
| Strawberry flavoured jelly – no added sugar | 115g pot | 0g | 0 |
| Digestive biscuit | 1 biscuit | 2.5g | 0.5 |
| Mars bar | 62.5g bar | 43.1g | 8.5 |
| Kit Kat bar | 21g bar (2 fingers) | 10g | 2 |
| Chocolate buttons | Small pack | 18g | 3.5 |
| Giant chocolate buttons | ½ large bag | 44g | 8.5 |
| Muller Amore Yoghurt (strawberry) | 120g pot | 24g | 5 |
| Mullerlight yoghurt (strawberry) | 175g pot | 8.6g | 1.5 |

Appendix 4

Suggestions for food to include in a healthy packed lunch²:

- A starchy food such as bread, pasta, rice, noodles, potatoes or other type of cereals every day; this will provide energy.
- Meat, fish or other source of non-dairy protein (e.g. lentils, beans, soya or hummus,) every day (usually as part of a sandwich, roll or salad). Protein is needed for growth, strong bones and teeth.
- Oily fish, such as pilchards, salmon or tuna occasionally. Fish is very good for brain development and contains vitamin D needed with calcium to build healthy bones and teeth.

We should aim to eat 5 or more portions or fruits or vegetables a day.

- At least one portion of vegetable or salad every day, this will provide vitamin and minerals essential for growth and development.
- At least one portion of fruit every day, try to eat a rainbow to ensure a range of vitamins and minerals to keep our immune system healthy.
- Dairy food such as milk, cheese, yoghurt, fromage frais or custard, dairy foods provide calcium needed for healthy bones, teeth and nerve function. Dairy also provides energy.
- A drink: water is best followed by semi-skimmed or skimmed milk. It is essential that children stay hydrated, just 2% dehydration can cause lack of concentration.
- Pretzels, seeds, fruit, crackers and cheese, and vegetable or bread sticks with a dip. **Variation is key to developing a healthy relationship with food.**
- ***Unsweetened***; 100% fruit juice, drinking yoghurt, milk drinks or smoothies**
- Cereal bars rather than cakes and biscuits**

Suggestions for food to include less often in a healthy packed lunch

- Snacks such as crisps.
- Chocolate coated biscuits or wafers.
- Cakes
- Meat and pastry products such as sausage rolls or pies

Suggestions for food to not include in a healthy packed lunch

- Confectionery such as chocolate bars.
- Sweets cause tooth decay
- Nut or nut products (although they can be very healthy) because of the danger to other children with allergies.
- Fizzy drinks as these are very unhealthy and have no nutritional value.
-

**** = labels can be misleading and these products can be very high in sugar,**

The government recommendations for fruit juice are to opt for the unsweetened versions and only have at meal times. Like fizzy drinks, fruit juice and squash can be high in sugar and can cause tooth decay and lead to obesity