Research, design and make a savoury dish or meal for a teenager that conforms to the Eatwell guide.
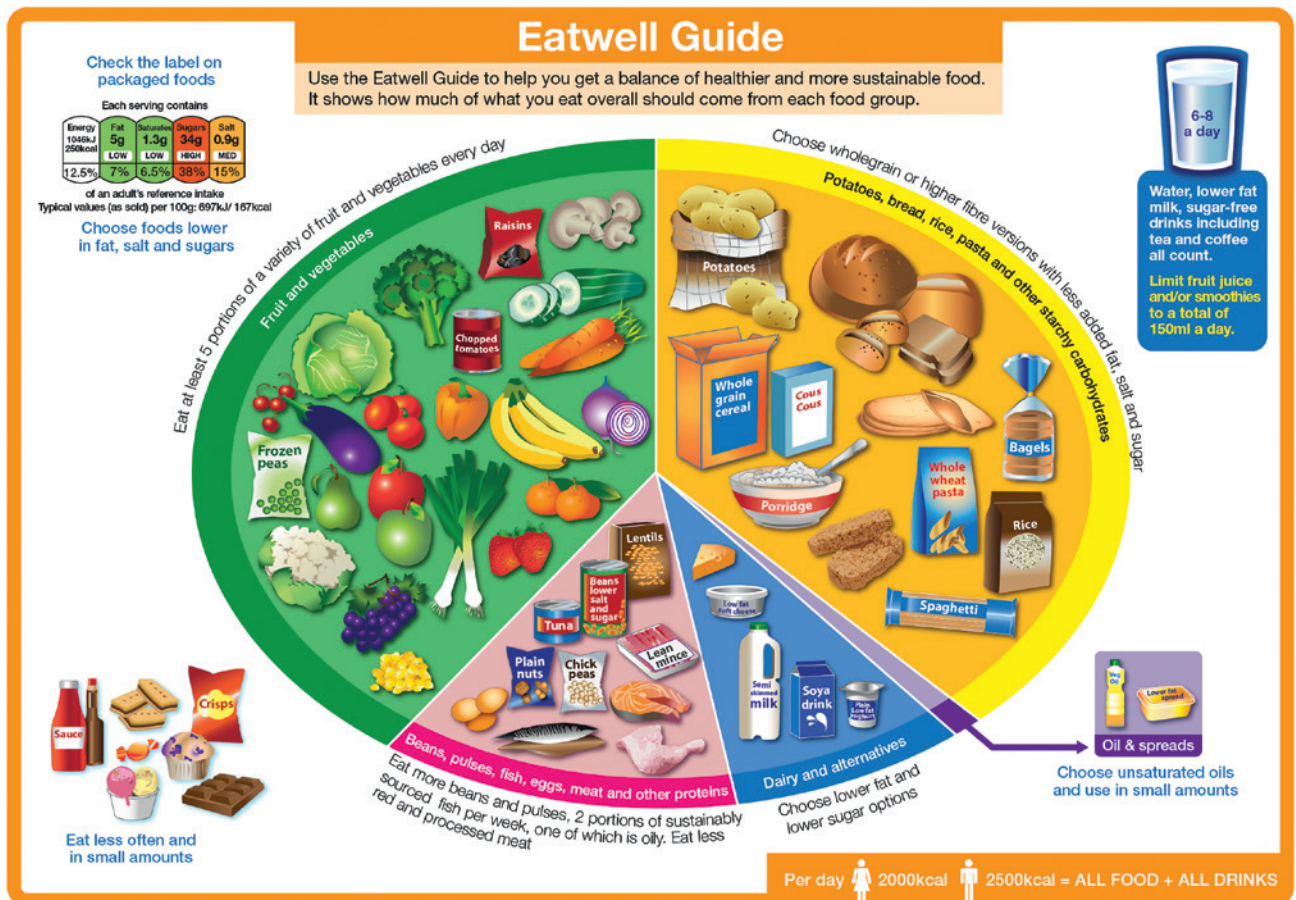
To meet the challenge you need to make the dish in school and explain/present:

- your reasons for choosing the recipe
- how the dish/meal meets the Eatwell guidelines
- the function and source (which food) of each nutrient.

In addition:

- Carry out a nutritional analysis of the dish.
- Recommend any changes to improve:
  - the nutritional profile of the dish
  - the sensory properties (taste, texture, appearance and aroma).

Extension

- Produce a recipe card for the improved dish.
- Explain how the dish or meal could be produced sustainably.

Research task

A teenage boy aged 15 and a teenage girl aged 16 are considering changing their diet to become either vegetarian or vegan.

Produce a nutrition guide explaining:

- the nutritional guidelines they must follow in order to stay healthy and well

- which macro- and micro-nutrients vegetarian and vegans can become deficient in, if they do not plan their meals carefully

- suggested food or meat alternatives they could include in their meals to ensure the necessary macro- and micro-nutrients are included in their diet.

Sources of information

British Nutrition Foundation www.nutrition.org.uk

Vegetarian Society www.vegsoc.org

NHS www.nhs.uk/Livewell/Vegetarianhealth/Pages/Vegetarianhealthhome.aspx

Activity: How many calories? 2c

Not all foods provide the same amount of energy. In the table below, try to match the correct number of calories in 100 grams of each food. To get you started, four have already been completed for you.

Food	Your guess	The actual number of calories in 100g
Apple		
Avocado		
Bacon, fried		
Baked beans in tomato sauce		
Banana		
Biscuits – digestive, chocolate		
Biscuits – digestive, plain		470
Brazil nuts		
Bread, white		
Bread, wholemeal		
Butter		
Cake – fruit cake		
Cake – plain sponge		460
Carrots – raw		
Cheddar cheese		
Cheese, cottage		
Chocolate – milk or plain		
Cod fried in batter		
Cod – raw		
Cornflakes		350
Cornish pasty		
Cream cheese		
Cream – double		450
Cream – single		
Cucumber		
Egg – whole, raw		
Honey		
Ice cream – vanilla		
Lentils, boiled		
Mars bar		
Mayonnaise		
Milk – whole		
Pasta – boiled		
Peanut butter		
Potato crisps		
Potatoes – boiled		
Potatoes – chips		
Quiche		
Raisins		
Sausage roll		

35
440
600
80
65
490
720
220
230
750
330
250
250
25
400
440
65
530
200
80
220
330
620
200
10
150
500
170
100
100
500
400
290
80
120
530

Activity: Energy density

2d

Label these foods in order of energy density with 1 being the most energy dense.
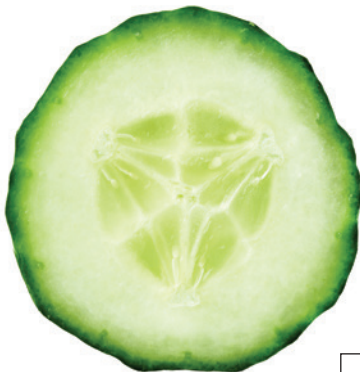
Activity: Reducing energy density

2e

Study the daily food intake of a teenager over three days, given below, and suggest ways in which they could reduce the energy density of the foods by replacing them with others.

	Current diet		Suggestions for lower energy density replacements
Sunday	Breakfast	Two fried eggs with fried bread	
		Tea and two sugars	
	Lunch	Four-cheese pizza and chips	
		Can of cola	
	Dinner	Fried chicken, mashed potatoes, cauliflower cheese	
		3 glasses of orange fruit juice	
Monday	Breakfast	Chocolate cereal and milk	
		Tea and two sugars	
	Lunch	Cornish pasty, packet of crisps, chocolate bar, apple pie	
		Can of cola	
	Dinner	Fried fish, chips, peas	
		Chocolate milkshake	
Tuesday	Breakfast	2 slices toast and peanut butter	
		2 glasses of orange juice	
	Lunch	2 sausage rolls, packet of peanuts, slice of cake	
		Can of lemonade	
	Dinner	Cheeseburger, chips, coleslaw	
		Large energy drink	

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Meat Cobbler *(4 portions)*

Cal	Fat	Sat Fat	Sugar	Salt
703kcal	41g	23g	6.4g	3.1g
35%	**58%**	**115%**	**7%**	**52%**

Per 371g Portion

Storage info
Store in the refrigerator 0° to below 5°C

Allergens
gluten, milk

Use By
Consume within 5 days of making it.

Manufactured By

0000000000000000

Net weight 1484g

Ingredients
beef mince (33%), chopped tomatoes (26%), flour (13%), milk (6%), butter (6%), cheese (5%), onion (4%), stock cube (1%), garlic (0%), Italian Herb Seasoning (0%)

	Per 100g	Per portion (371g)	RI	%RI*
Energy kj	793kJ	2942kJ	**35%**	
Energy kcal	190kcal	703kcal	**35%**	
Protein	11g	40g	**88%**	
Carbohydrate**	11g	40g	**20%**	
of which sugar**	1.7g	6.4g	**7%**	🟢
Total Fat	11g	41g	**58%**	🟠
of which saturates**	6.2g	23g	**115%**	🔴
Fibre**	0.7g	2.6g	**11%**	
Salt	0.8g	3.1g	**52%**	🟠

* Percentage Daily Values are based on a 2,000 calorie diet for an average adult. Your Daily Values may be higher or lower depending on your calorie needs.
** Data for some ingredients is not available.

Questions

1   Analyse and explain the nutritional analysis data. How well does the cobbler meet the RNI (Recommended Nutrient Intake)?

2   Explain the functions of each nutrient in the recipe, for example, why is protein needed in the diet?

3   How well does the meat cobbler meet the Eatwell Guide recommendations?

4   Explain which group each ingredient will fit in the Eatwell Guide.

5   How could the nutritional profile/ingredients be improved, for example, increasing fibre, reducing saturated fat?

6   How could the recipe be adapted for:

  • vegetarians

  • vegans

  • coeliacs

  • people with lactose intolerance?

Breakfast cereal A

Breakfast cereal A (per 100g serving)	
Calories 320	
	% RNI
Total fat	3%
Saturated fat	3%
Sodium	15%
Total carbohydrate	25%
Dietary fibre	36%
Sugar 16.4g	
Iron	98%
Calcium	76%

Breakfast cereal B

Breakfast cereal B (per 100g serving)	
Calories 460	
	% RNI
Total fat	15%
Saturated fat	3%
Sodium	56%
Total carbohydrate	22%
Dietary fibre	16%
Sugar 28.4g	
Iron	50%
Calcium	90%

Task

1   Using the data in the table, explain which breakfast cereal you would recommend for a teenager. Give detailed reasons for your answer.

2   Explain why it is important to eat breakfast.

3   Explain why is it important to have a good source of fibre in your diet.

4   The breakfast below was eaten by an adult. Explain how the breakfast could be adapted to:

   • increase the fibre content

   • reduce the sugar content.

> **Breakfast:**
> A bowl of cornflakes with added sugar
> 2 slices of white toast with jam
> A glass of concentrated orange juice
> A cup of tea with two sugars

**Activity:
Risk factors for cancer**

2h

From the list below, choose the 9 factors that increase the risk of developing cancer.

Lack of physical activity or exercise

Eating too many saturated fats

Unbalanced diet containing
a lot of processed foods

Menopause in women

Not enough fresh fruit and
vegetables in diet

Smoking

Lack of calcium and vitamin D
in the diet

Family history

Eating disorders such as
anorexia nervosa

High blood pressure

Becoming older

Excessive alcohol intake

Not reaching peak bone
mass when younger

Energy dense diet containing a
lot of saturated fat, salt and sugar

Too much salt/sodium in the diet

Type 2 diabetes

Being overweight or obese

Activity: Risk factors for cardiovascular disease

2i

From the list below, choose the 12 factors that increase the risk of cardiovascular disease.

Lack of physical activity or exercise

Eating too many saturated fats

Unbalanced diet containing a lot of processed foods

Menopause in women

Smoking

Not enough fresh fruit and vegetables in diet

Lack of calcium and vitamin D in the diet

Family history

High blood pressure

Eating disorders such as anorexia nervosa

Becoming older

Excessive alcohol intake

Not reaching peak bone mass when younger

Energy dense diet containing a lot of saturated fat, salt and sugar

Too much salt/sodium in the diet

Type 2 diabetes

Being overweight or obese

Activity: Risk factors for coronary heart disease

2j

From the list below, choose the 12 factors that increase the risk of coronary heart disease.

Lack of physical activity or exercise

Eating too many saturated fats

Unbalanced diet containing a lot of processed foods

Menopause in women

Not enough fresh fruit and vegetables in diet

Smoking

Family history

Lack of calcium and vitamin D in the diet

High blood pressure

Eating disorders such as anorexia nervosa

Becoming older

Excessive alcohol intake

Not reaching peak bone mass when younger

Energy dense diet containing a lot of saturated fat, salt and sugar

Too much salt/sodium in the diet

Type 2 diabetes

Being overweight or obese

Activity: Risk factors for type 2 diabetes

2k

From the list below, choose the 6 factors that increase the risk of type 2 diabetes.

Lack of physical activity or exercise

Eating too many saturated fats

Unbalanced diet containing a lot of processed foods

Menopause in women

Not enough fresh fruit and vegetables in diet

Smoking

Lack of calcium and vitamin D in the diet

Family history

Eating disorders such as anorexia nervosa

High blood pressure

Excessive alcohol intake

Becoming older

Not reaching peak bone mass when younger

Energy dense diet containing a lot of saturated fat, salt and sugar

Too much salt/sodium in the diet

Type 2 diabetes

Being overweight or obese

Activity: Risk factors for hypertension

2I

From the list below, choose the 6 factors that increase the risk of hypertension (high blood pressure).

Lack of physical activity or exercise

Eating too many saturated fats

Unbalanced diet containing a lot of processed foods

Menopause in women

Smoking

Not enough fresh fruit and vegetables in diet

Lack of calcium and vitamin D in the diet

Family history

High blood pressure

Eating disorders such as anorexia nervosa

Becoming older

Excessive alcohol intake

Not reaching peak bone mass when younger

Energy dense diet containing a lot of saturated fat, salt and sugar

Too much salt/sodium in the diet

Type 2 diabetes

Being overweight or obese

Activity:
Risk factors for obesity

2m

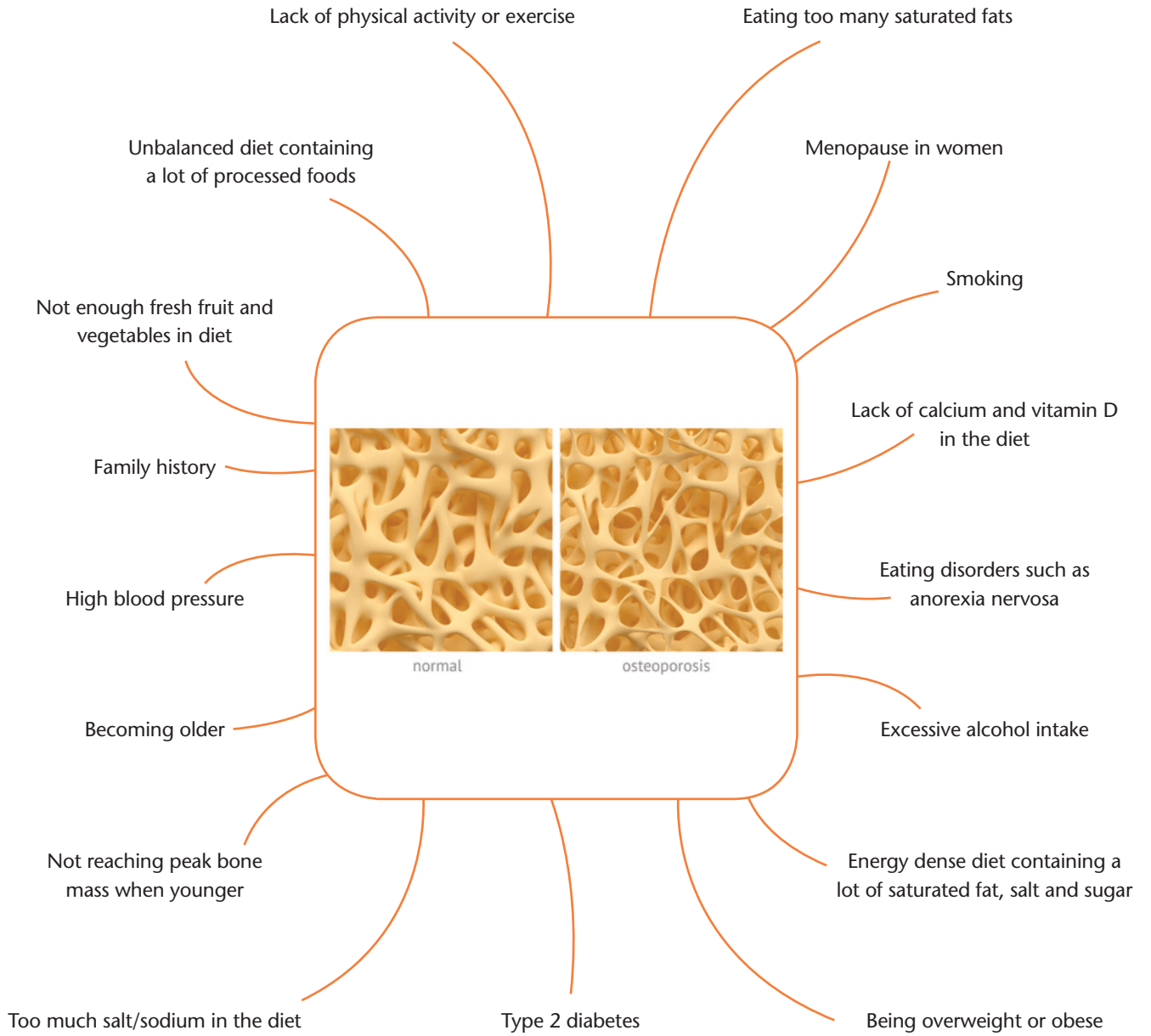From the list below, choose the 4 factors that increase the risk of obesity.

Lack of physical activity or exercise

Eating too many saturated fats

Unbalanced diet containing
a lot of processed foods

Menopause in women

Smoking

Not enough fresh fruit and
vegetables in diet

Lack of calcium and vitamin D
in the diet

Family history

High blood pressure

Eating disorders such as
anorexia nervosa

Becoming older

Excessive alcohol intake

Not reaching peak bone
mass when younger

Energy dense diet containing a
lot of saturated fat, salt and sugar

Too much salt/sodium in the diet

Type 2 diabetes

Being overweight or obese

Activity: Risk factors for osteoporosis

2n

From the list below, choose the 10 factors that increase the risk of osteoporosis.

Lack of physical activity or exercise

Eating too many saturated fats

Unbalanced diet containing a lot of processed foods

Menopause in women

Smoking

Not enough fresh fruit and vegetables in diet

Lack of calcium and vitamin D in the diet

Family history

normal   osteoporosis

Eating disorders such as anorexia nervosa

High blood pressure

Excessive alcohol intake

Becoming older

Energy dense diet containing a lot of saturated fat, salt and sugar

Not reaching peak bone mass when younger

Too much salt/sodium in the diet

Type 2 diabetes

Being overweight or obese

Activity: Important factors for good health

20

From the list of factors below, pick the 9 that are important to maintain a good level of health.

Getting plenty of sleep

Sitting down for long periods

Having time to relax and have fun

Getting plenty of fresh air

Sleeping until midday

Drinking plenty of water

Eating high levels of sugar

Eating plenty of fresh fruit and vegetables

Skipping meals

Eating a balanced diet containing lots of different fresh foods

Enjoying fried food

Taking care to conserve energy

Grazing whenever you feel hungry

Eating regular meals throughout the day

Taking part in plenty of physical activity and exercise

Making sure you have as much coffee as possible

Eating one big meal a day

Not drinking too much water

Taking care not to eat too many different types of food

Eating breakfast every day

Activity:
Obesity and diet – Case study **2p**

The main findings for Statistics on Obesity, Physical Activity and Diet: England 2015

- There was a marked increase in the proportion of adults who were obese, from 13.2 per cent in 1993 to 26.0 per cent in 2013 for men, and from 16.4 per cent to 23.8 per cent for women.

- In reception year (aged 4–5) in 2013/14, the proportion of obese children (9.5 per cent) was higher than in 2012/13 (9.3 per cent).

- In 2013, fewer men than women consumed the recommended five or more portions of fruit and vegetables.

Statistics on Obesity, Physical Activity and Diet: England 2015 HSCIC

Task

Read the findings above from a report about obesity and the diet.

Use the findings from the report to answer these questions.

1. Evaluate why the rates of obesity are increasing in the UK.
2. Explain what could be done by government to reduce the levels of obesity.
3. Explain how families could eat more healthily.
4. Consider how primary schools can promote healthy eating to young children.
5. Give reasons why men may eat fewer fruit and vegetables than women do.